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# fitness

ON COVER: Jay Zuccato

HIS EDITION

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- Jay Zuccato

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MARCH - APRIL 2015

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OTHER COUNTRIES R36.84 EXCL. TAX

7 WAYS TO  
BLAST FAT  
AND GET  
A RIPPED  
6 PACK

6

weeks  
to a  
fitter  
you



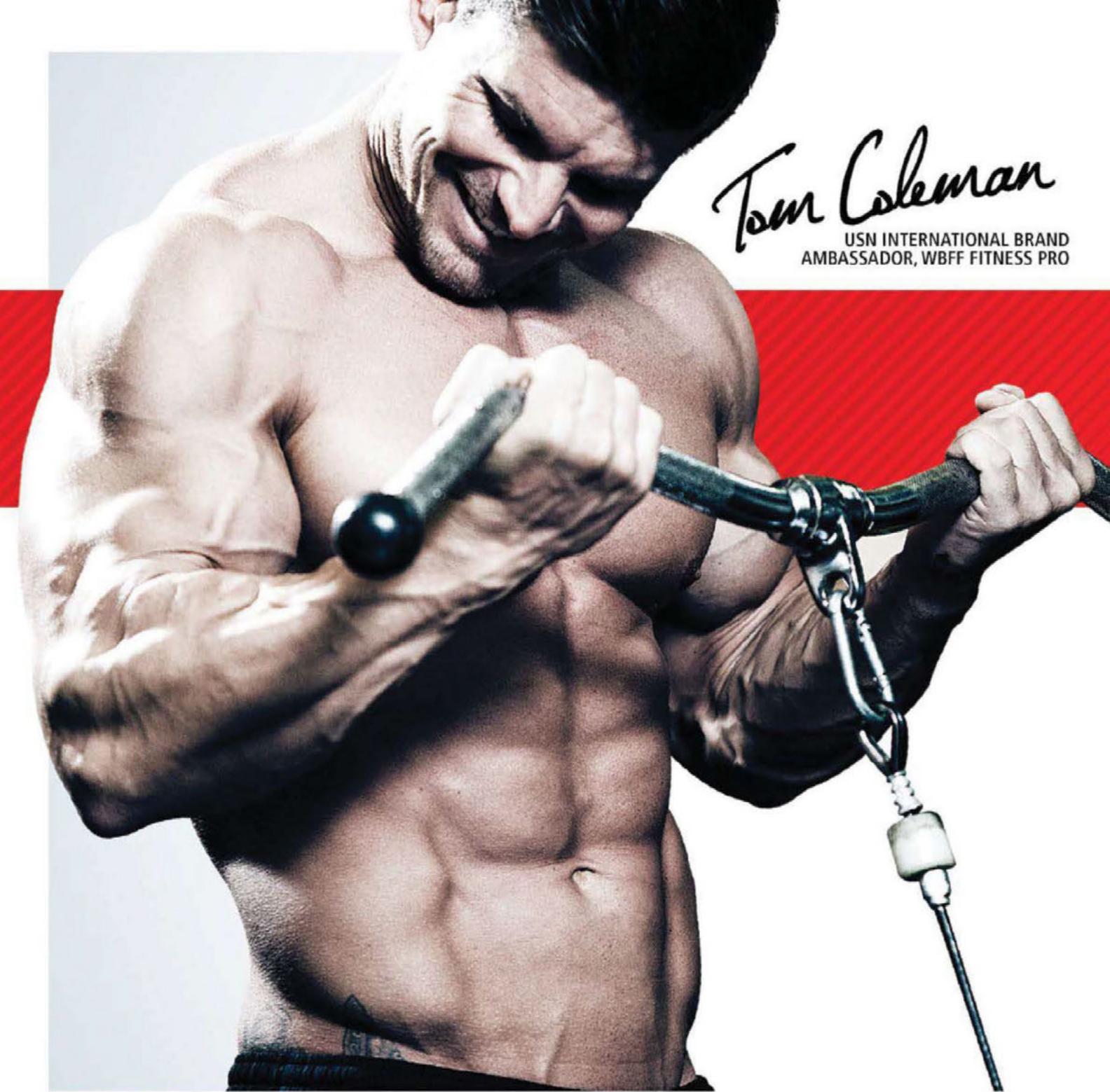
Pre-workout activation for optimal performance

Coffee: more than a morning boost

Meal timing vs meal frequency

What's more important?





*Tom Coleman*

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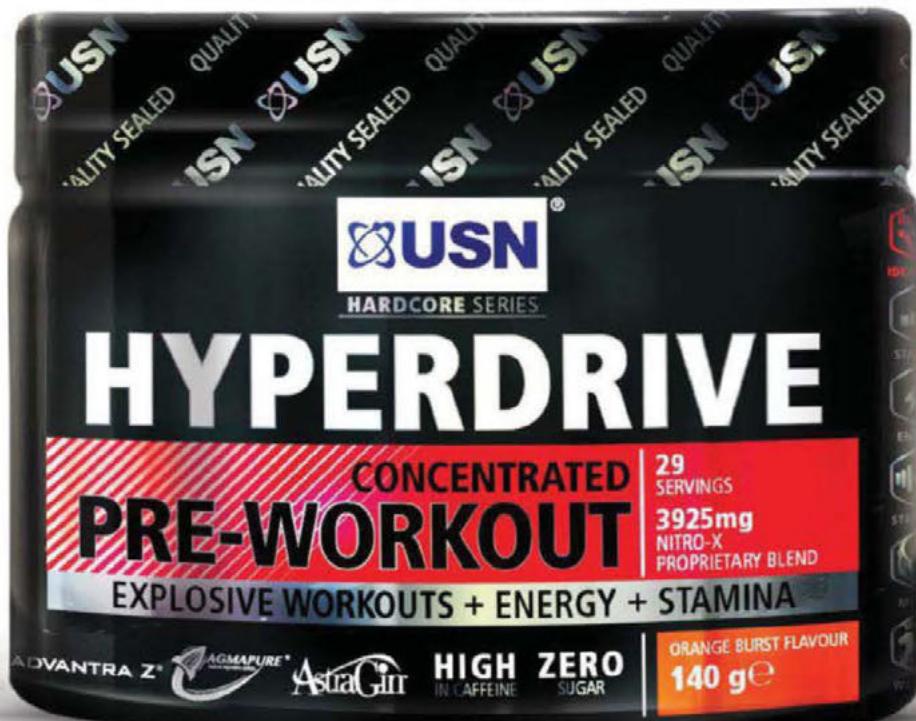
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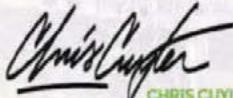
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Cover image of Jay Zuccato

by Arthur Kwiatkowski

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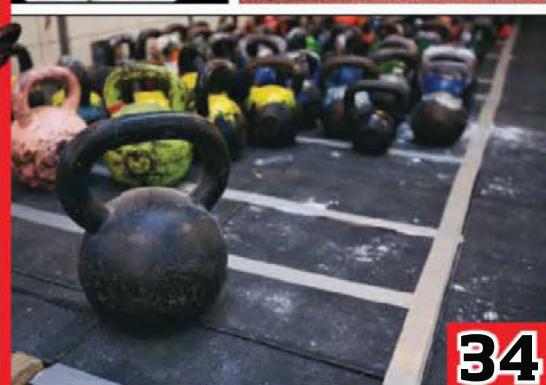
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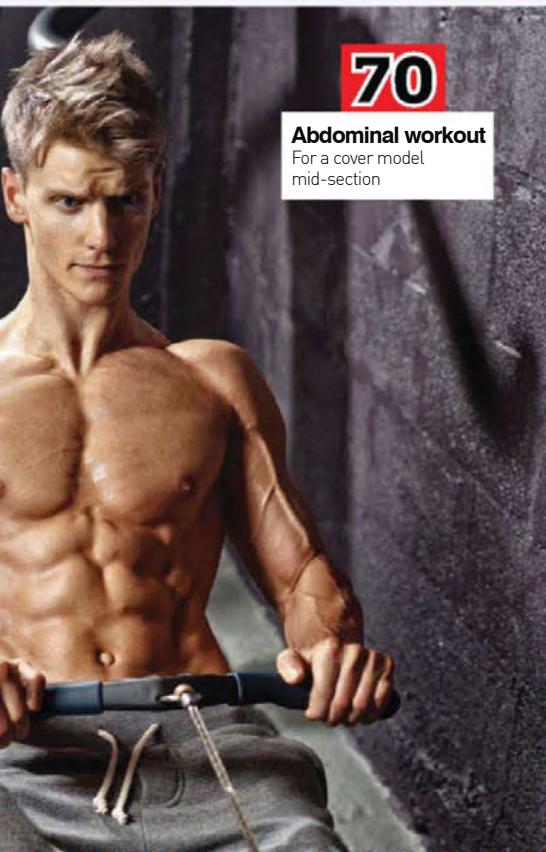
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NIKITA LONG



COMBINE WITH

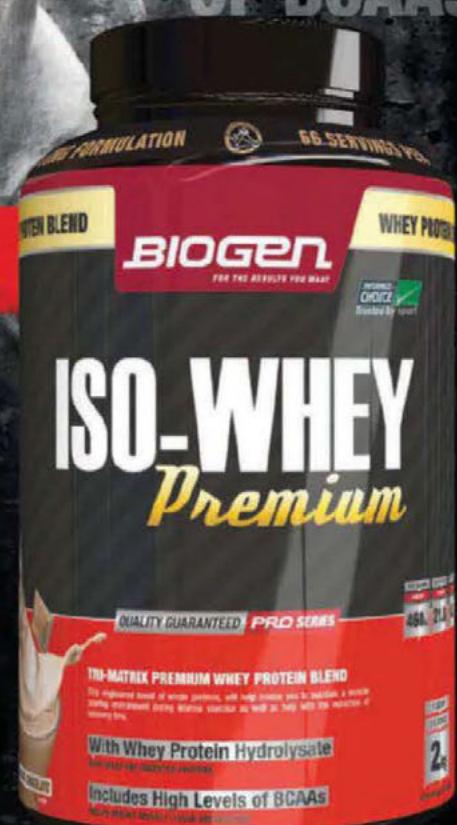


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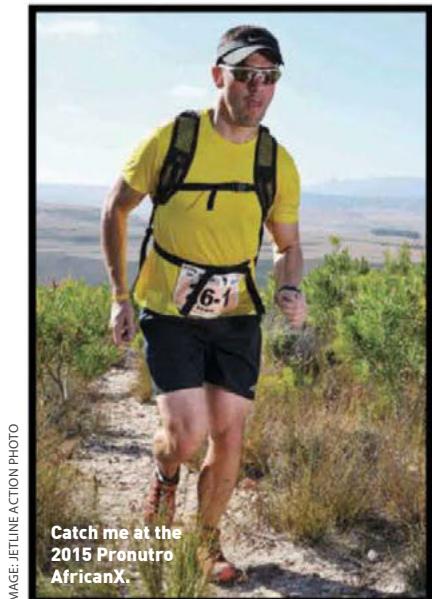


IMAGE: JETLINE ACTION PHOTO

While my role as the editor of a magazine requires me to keep an open mind, consider multiple points of view, and filter out the science from the non-science, to deliver balanced, unbiased opinion and insight that both informs and educates, I find that I, too, often fall victim to the human condition of narrow-mindedness.

As an example, when I started running seriously again, some three years ago, I was adamant that I would never run the Comrades marathon. Anyone who asked would get my usual response: "That's lunacy. I was built for speed, not endurance." Yet, here I am, six months, and over 1000km into my Comrades training.

Similarly, during this time, my attitude toward running shoes has changed too. Through my previous experiences, and my research and interviews for articles we ran in this magazine, I decided that zero drop shoes were the only way to go, for a number of reasons. I therefore made the switch from a 12mm heel-to-toe drop, to a 0mm drop. At first it went well. I was running faster and more efficiently. I vowed to never again run in anything that didn't have a flat profile. Then, as is often the case, things stopped going so well. My right knee started giving me issues. While I don't think the shoes caused the problem, they certainly didn't help the issue due to a combination of biomechanical factors. To cut a long, involved story short, I have since had to soften my dogmatic position on zero drop running shoes. Following months of rehab work with my team of experts

(thanks Sarah, Sean and Matt), and a shift to a 4mm drop (thanks Puma), my knee seems to be on the mend. While 4mm is a small concession to make, it highlighted to me how easily we can become victims of this mindset, no matter how hard we try to keep an open mind.

You see, it's natural to resist change, in any form. Whether it's a fear of the unknown, fear of being proven wrong (protecting your ego), or a completely illogical resistance to change that is rooted in our psyche (our primitive brains), we're often unable, or unwilling to open our minds to other options.

In addition, far too often our beliefs are shaped by what we're taught and told. Seldom are our beliefs built, and tested, from experience. Sadly, without allowing yourself to experience and embrace different possibilities, opportunities, people, views, suggestions and interests, you're closing yourself off to life. It's a dangerous place to live, because experience is the only way you can ever be certain of something. I mean, how will you ever know unless you try?

Experience is subjective, so hearing and learning from others, be it directly or through research, should only be the starting point of your journey of discovery, and your ultimate viewpoint on a matter. Don't decide on something based solely on the available information, and the opinion of others. Rather use that to help shape your own perspective and inform your experiential approach to learning. I guarantee that, most of the time at least, you'll be better off having experienced something for yourself. If you like what you find then your life will be better and richer for it. If you don't you'll have gained valuable life experience that will help to shape and inform your perspective; if nothing else, it broadens your view.

So remove life's blinkers, and don't knock something until you've tried it. You might be pleasantly surprised by what you find.

**Pedro Van Gaalen**  
Editor

**MUST READ**

**ACTIVATION**

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# fitness



@fitnessHE



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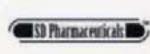
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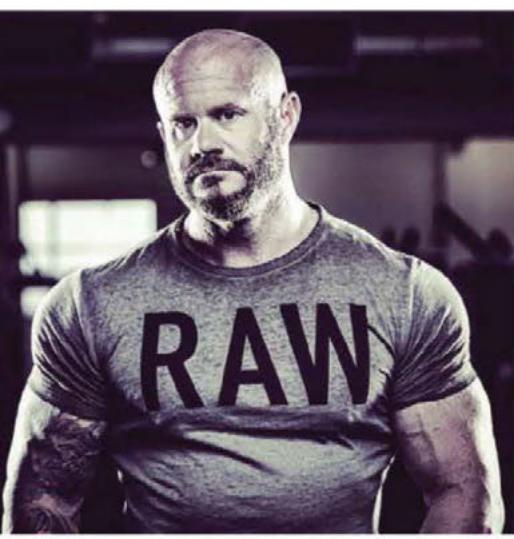
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## MASTER YOUR MIND



Staying focussed on your goals and pushing yourself in your chosen sporting arena is tough enough, even when all the other aspects of your life are in check. However, when pressed by other external issues such as the state of the economy, and all the other things that plague our beautiful country at present, your ability to stay positive, focused and productive becomes more difficult. A slowly decaying electrical grid, for example, and the resulting change in attitude and morale within our communities makes it tough to remain upbeat, let alone focused on our goals. Our health and fitness or sporting goals are also generally seen as indulgences. As such, when everything else around us seems to start falling apart, and we feel pressure from multiple angles, we tend to let go of that one thing that makes us feel alive. Sure, we tell ourselves that we'll get back on track once we've sorted out the other issues that are influencing and hindering our ability to stay focused on our goals. The problem is, these issues have become more commonplace, and it will never be the perfect time to chase your goals. This is what often sets the successful apart from the rest – they don't let the people or the world around them to influence and dictate what they can achieve, and when they can achieve it. While these people are often viewed as extremists, because they forge through any perceived challenge or roadblock as they doggedly pursue their goals, they're the people who take what we do to a whole new level. They don't settle for anything but the best, and it's that inner drive to carry on, no matter what life throws their way, that separates the winners from the rest, and makes them the best. If anything, they see these external factors as just another challenge on their path to success, not as a reason to abandon their goals. After all, if it was easy to overcome and achieve, everyone would be doing it.

Nothing ever gets easier when it comes to continual improvement and progression. Just when you've crossed one hurdle or reached a milestone there's a new challenge or obstacle that awaits you. The ability to get comfortable being uncomfortable in your search for progress is the fuel that should drive you. Your hunger to reach beyond your current potential needs to get stronger and stronger with each and every training session.

I, for one, have been working hard to control my emotional reactions and responses to these external factors. It's probably the most beneficial and progressive step I've made in terms of my own personal growth. Working in the publishing game means there is a constant element of stress that plagues me daily. Deadlines, print schedules, power cuts, and production delays are all part of trying to get a magazine into the polished final product you hold in your hands. The challenge is practicing what I preach, and not letting late nights in the office hinder my ability to stay focused on the progress I want to make in the gym.

So, the message I want to leave you with is this: How we manage stress, and all the external influences that bombard us on a daily or weekly basis is, singlehandedly, the most important influencing factor on our own wellbeing. Achieving our performance or physique goals requires laser beam focus, with little or no influence on what we do from the outside world. Learn to channel your thoughts to remain positive, no matter what life throws at you, and never lose sight of your dreams because of a few obstacles along the way. See external influences as just one more challenge to overcome as you build your mind into a fortress of indestructible and progressive, positive thoughts. Becoming the master of your mind is, by far, the most important skill to master on the road to ultimate success. If you can do that, nothing can stop you.

Enjoy issue 16.

Andrew Carruthers  
Publisher

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### FROM THE PUBLISHERS OF



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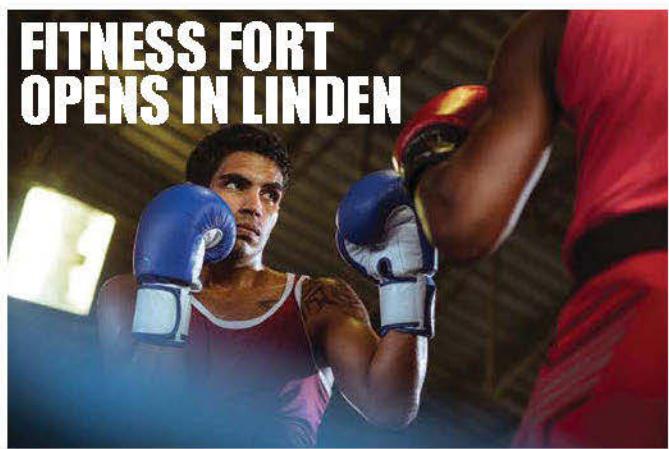
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# FITNESS NEWS

[ LATEST NEWS AND EVENTS ]

## FITNESS FORT OPENS IN LINDEN



THE FITNESS FORT RECENTLY OPENED ITS DOORS TO THE GENERAL PUBLIC IN AND AROUND THE LINDEN AREA, IN NORTHERN JOHANNESBURG.

Set in a transformed double stand property in this tree-lined suburb, this new training facility offers a host of different fitness activities and training options. It boasts an outdoor training pool, spacious studios, shower facilities, physiotherapy rooms, a complementary coffee bar, and access to top trainers in their respective fields. Phase one of the project has officially launched, and includes the internationally acclaimed Crazy Monkey Defense Program, functional fitness, kickboxing, MMA [holistic and suitable for adults and children], Pilates, advanced indoor cycling, physiotherapy and sports massage. Phase two is expected to launch in April 2015, and will be host to a fully stocked 2½ story gym and climbing wall. The Fitness Fort is proudly endorsed by TechnoGym SA, and will be managed by brand ambassador and national master trainer, Matt Active, who has recently expanded his zany brand of fitness into this exciting new functional fitness facility.

Visit [www.thefitnessfort.co.za](http://www.thefitnessfort.co.za) for more info or contact Matt on 011 888 4818 or 078 826 5508. Follow @mattActiveSA on Twitter.

## WEISS CROWNED XTERRA BUFFELSPoORT CHAMP

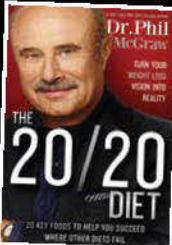
The picturesque Buffelspoort Dam, in the North West Province, once again played host to some 400 Xterra warriors on Saturday, 24 January 2015. Kicking off the 2015 Totalsports Xterra, presented by Rehidrat® Sport season, the Buffelspoort event delivered great action. Bradley Weiss claimed a long overdue victory in the men's Full Xterra event, completing the 1.5km swim, 26.5km mountain bike leg, and the 12km trail run in a combined time of 02h35m31s. As the third individual athlete to exit the water, it was on the run discipline that Weiss was able to capitalise when leader Conrad Stoltz made a wrong turn. Antoine Van Heerden came in second, while Stoltz finished third.

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10 MARCH - APRIL 2015

## OUR TOP FITNESS READS THIS MONTH

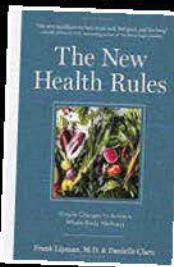


### 1 THE 20/20 DIET: TURN YOUR WEIGHT LOSS VISION INTO REALITY

By Phil McGraw

In The 20/20 Diet, Dr. Phil McGraw identifies seven reasons why other diets fail, over and over again: hunger, cravings, feeling of restriction, impracticality and expense, boredom, temptations, and disappointing results or plateaus. He then addresses each of these roadblocks by applying the latest research and theories that have emerged since his last best seller on the same topic, The Ultimate Weight Solution. Dr. Phil and his team have created a plan that you can start following right now, and will continue to work for the rest of your life. In this diet, readers will start by eating only 20 key ingredients, called the "20/20 foods", which theories indicate may help enhance thermogenesis and help you feel full. The book also empowers you with cognitive, behavioural, environmental, social and nutritional tools to finally reach your goal, and learn life-long healthy habits to maintain those results.

R348, [www.kalahari.com](http://www.kalahari.com)



### 2 THE NEW HEALTH RULES: SIMPLE CHANGES TO ACHIEVE WHOLE-BODY WELLNESS

By Frank Lipman M.D. and Danielle Claro

A leading expert in the field of functional medicine, Dr. Lipman focuses on the root causes of illnesses, and guides his patients to the deepest, most lasting sources of wellness. In this book, he and co-author, Danielle Claro, make life-changing health advice available to all. Their book offers the cutting-edge secrets to optimal health in a stylish, lushly illustrated format. The book wades through the often contradictory information that bombards us daily, and delivers more than 100 actionable tips that will improve every aspect of our health—body, mind, and soul. Readers will learn simple rules for getting a good night's sleep, why a daily dose of sunlight is crucial, and which toxic cosmetics and kitchen products should be tossed. It will also teach us which foods help prevent Alzheimer's, why sugar is so destructive, and how to bring "good bacteria" into the digestive system—providing an arsenal of easy-to-process tips and guidelines to make us stronger, healthier, and happier.

R261, [www.kalahari.com](http://www.kalahari.com)



### 3 THE HARDGAINER SOLUTION: THE TRAINING AND DIET PLANS FOR BUILDING A BETTER BODY, GAINING MUSCLE, AND OVERCOMING YOUR GENETICS (KINDLE EDITION)

By Scott Abel

The Hardgainer Solution argues that you must train, first and foremost, for development, and then a certain kind of strength will come. While you will get bigger and stronger on this training programme, author Scott Abel believes that true physique development and muscle gain is not about 1RM strength. This programme is designed with one thing in mind: gaining muscle and physique development. The diet and meal plans included are reasonable and sustainable, and come with guidelines for tweaking and customisation. They are what Scott has used with his own clients.

\$3.41, [www.amazon.com](http://www.amazon.com)

# NIKE AIR MAX 2015

The Nike Air Max 2015 will sport an all-new upper, engineered to complement the foot's dynamic motion, paired with the full-length, iconic Max Air cushioning technology. The design team focused on delivering the soft, bouncy cushioning runners love in the Air Max, in addition to creating the best performing shoe upper in an Air Max to date, giving runners better flexibility, fit and comfort. The new shoe delivers exceptional full-length cushioning, features an engineered mesh upper designed for the foot in motion, and is lighter than its predecessor, at 366g for a men's size 10.



## FITPRO COURSE DATES

### JOHANNESBURG:

- **7 March** - Pilates Mat
- **7-8 March** - Bootcamp
- **14 March** - Running Right
- **16 March** - Personal Fitness Trainer Course
- **19 March** - Aerobics Instructors Course (phase 1 - starts)
- **10 April** - Athlete Assessment
- **11 April** - Functional Training
- **18 April** - Advanced Biomechanics
- **25 April** - Functional Movement Assessment
- **April** - Kettlebells

### CAPE TOWN:

- **16 March** - Personal Fitness Trainer Course
- **April** - Bootcamp

### NAMIBIA:

- **March** - Personal Fitness Trainer Course

For more info or to book visit [www.fitpro.co.za](http://www.fitpro.co.za).



Cape Town is set to host the inaugural FNB 12 OneRun. The event aims to create a unique running experience based on international standards. The mass participation event also aims to attract the best athletes from South Africa, Africa and around the world, offering a 12km race route that takes participants from Woodbridge Island, Milnerton to the FNB Portside Building in Bree Street, Cape Town. All entrants can look forward to a fast route that will take runners past and through some of Cape Town's most renowned landmarks. Entries for the event opened in February.

For more info visit [www.thecapetown12.com](http://www.thecapetown12.com) or follow @Ctown12 on Twitter, or Ctown12 on Facebook.



**Cipla Nutrition**

## THE SCIENCE OF SUCCESS™

Cipla Nutrition, the quality sports nutrition brand owned by South Africa's third largest pharmaceutical company **Cipla Medpro**, is the only sports supplementation brand in South Africa owned by a leading pharmaceutical company. The brand tagline, '**Science of Success**', reflects the brand's unique product offering, that is backed by strict regulatory and quality controls.

The **Cipla Nutrition** brand is the brainchild of **Cipla Nutrition** Managing Director and co-founder, Deon Lewis, who says that the brand, with its unique positioning, will bring clarity and transparency to a largely unregulated industry to protect consumers from being duped into buying inferior products with incorrect label claims and dubious ingredients. The **Cipla Nutrition** brand is committed to quality and easy-to-understand, jargon-free information about each nutritional supplement, tailored for all consumers who are interested in a healthier lifestyle thereby bringing quality nutrition to all.

The South African sports nutrition industry has, in the past, focused on delivering products to a specific clientele, mostly in the body building sector. As such, the nutritional supplementation industry was not easily accessible to, or understood by, consumers who are not professional athletes, but wish to live healthier lifestyles.

Known for his hands-on approach and can-do attitude, 44 year old Lewis is passionate about working with a motivated and results driven team and says that the key insight for all stakeholders lies in understanding "Today's consumer likes to be well-educated about a product before they will make use of it and as such, we have positioned the **Cipla Nutrition** brand to ensure that the label delivers on that promise."

# FITNESS NEWS

[LATEST NEWS AND EVENTS]



## SESIPI DEFENDS PUMA TRAIL RUN TITLE

Just under 600 trail running enthusiasts gathered at Buffelspoort Dam, in the North West Province, on Sunday, 25 January 2015, to take on the Puma Trail Run. Forming part of the action of South Africa's largest off-road triathlon, the Totalsports Xterra, presented by Rehidrat® Sport, the trail run events incorporated both the Xterra Lite and Full trail run routes. Edwin Sesipi successfully defended his title in the 12km race, crossing the finish line in 48m09s. Thabang Madiba came in second, while Altus Badenhorst finished third.

## CAPE TOWN GETS RIPT

The Sport Science Institute of South Africa (SSISA) recently launched RIPT – Researched Innovative Performance

**Training – classes.** Gym Africa has partnered with SSISA, and is fully equipping the new high performance gym and RIPT training area. The equipment choice is based on ongoing research by Hammer Strength, Life Fitness and Force USA, with the intention of providing an optimal training environment that delivers maximal gains for members.

In parallel with this, the RIPT

programme intends to optimise the benefits of group training through the application of validated training methods and programmes, along with the effective assessment and monitoring of members. On joining the RIPT programme, each member will have their fitness goals and current familiarity and proficiency with the training equipment assessed. Classes will be instructed by biokineticists, with three streams catering for varying ability levels. These factors will ensure a safe and professional training environment.

E-mail [RIPT@ssisa.com](mailto:RIPT@ssisa.com) or contact Andre Barnard on 021 659 5659 for more info, or to sign up. You can also click on the RIPT logo on [www.ssisa.com](http://www.ssisa.com).



International Health & Fitness Professionals Academy

info@hfpa.co.za  
011 807 9673  
[www.hfpa.co.za](http://www.hfpa.co.za)

## Upcoming COURSES EARN CPD POINTS

### MARCH

- Rocktape: Performance Movement Taping (4 CPD)
- Reboundology Trainers Course
- Fighting FITT (8 CPD)

### APRIL

- Pre & Post Natal Exercise (6 CPD)
- Kettlebell Instructor (8 CPD)

### MAY

- Group Fitness Instructor (NQF Level 4)
- Kids Development (8 CPD)
- Sports Conditioning (With SAQ) (8 CPD)
- Applied Sports Psychology (20 CPD)

### JUNE

- Sports Massage (NQF Level 4)
- Pilates Abc: Beginner And Intermediate (NQF Level 4)
- Reboundology Trainers Course
- Fighting FITT (8 CPD)
- Studio Cycle (8 CPD)



## BUYS HEADS UP NEW SA MTB TEAM

London Olympian, Philip Buys, widely regarded as South Africa's most complete mountain bike racer, will lead a new 14-rider mountain bike racing team into 2015 – and beyond. Scott Factory Racing, powered by LCB, will focus primarily on the Olympic Cross-Country (XCO) discipline, with World Championship and Olympic Games success as its long-term goal. The team comprises four elite men, eight junior men and two junior women. Joining Buys in the elite section are Matthys Beukes, Gert Heyns and Arno du Toit. The Elite men will help mentor the youngsters within a structured, professional team environment. Buys and Beukes will race the 2015 Absa Cape Epic as teammates, with Heyns and Du Toit forming their back-up team.

## REEBOK LAUNCH NANO 4.0

Performance, durability and comfort are packed into the latest evolution of the Reebok Nano training shoe. DuraCage technology has been improved from the Nano 3.0, delivering a tough yet lightweight upper, while the RopePro protection wrap gives bite and support for rope climbs. Forefoot and heel pods provide cushioning and shock absorption, in a shoe that is lighter than its predecessor.

(Weight:  
Men's –  
275.02g).

Available  
at the retail  
selling price of  
R1799.95.



## IRONMAN 70.3 DURBAN EVENT ANNOUNCED

Ironman has announced the addition of South Africa's second Ironman® 70.3® race, the Standard Bank Ironman 70.3 Durban triathlon. The inaugural race will be held on August 2, 2015. Consisting of a 1.9km swim, a 90.1km bike and a 21.1km run, the Durban course will be set along Durban's Golden Mile, where athletes will cycle and run past the iconic Moses Mabhida stadium.

The race will have 50 qualifying slots to the 2016 Ironman 70.3 World Championship, taking place in Sunshine Coast, Queensland, Australia. Professional athletes will compete at Durban for a total prize purse of \$50,000 USD. Visit [www.ironman.com/durban70.3](http://www.ironman.com/durban70.3) for more info.



## PUMA LAUNCHES IGNITE RUNNING SHOE

Puma recently announced the launch of Ignite, a performance running shoe featuring innovative foam technology that maximises energy return. Ignite is Puma's most responsive running shoe, optimising comfort and durability, which makes it a suitable option for a wide range of runners. Ignite shoes incorporate proprietary foam that provides responsive cushioning, optimal rebound, and comfort. Strategically placed in the heel of the shoe is ForEverFoam—a compound used heavily in the automotive industry. This material creates long-lasting durability and is entirely new to the market. The direct-inject tooling is a first of its kind for Puma, which has created its most responsive foam. Available from March 2015, with further expansions in the Ignite line expected soon in the running and training product categories.

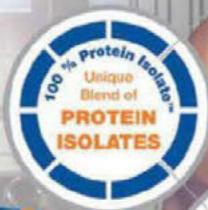


## PUMA FAST TRACK NOW AT PLANET FITNESS

Puma Fast Track, an athletic programme designed on track and field training principles, launched in selected Planet Fitness gyms in January 2015. The programme is a first for South Africa, and exclusive to Planet Fitness. The programme aims to teach great running technique using a combination of running drills, agility drills, circuit training and relay runs. The new Puma Fast Track programme is free for Planet Fitness members, and makes use of speed ladders, mini hurdles, mini cones, plyometric boxes and relay batons. It is recommended that participants have a base level of fitness and conditioning to do this programme. Sessions last for 30 minutes, and take place on the three-lane, 250m running track available at the following Planet Fitness gyms: Wanderers, Bedfordview, Fourways, Rivonia, Platinum, Centurion Gate, Witbank, and Westville (KZN).

## Make the most of your WORKOUT!

NEW & IMPROVED FORMULATIONS



Adrian Colyn  
WBFF Pro & Personal Trainer

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# FITNESS NEWS

## EVENTS CALENDAR

### » 2015 CAPE TOWN CYCLE TOUR LIFECYCLE EXPO & REGISTRATION

The Cape Town Cycle Tour Lifecycle Expo is the largest of its kind in Africa, attracting thousands of people over three days in the lead-up to the annual Cape Town Cycle Tour in March. This 'megastore' of cycling merchandise includes the top road and mountain bikes, cycling gear, and a fully-equipped food hall, with more than 340 exhibitors. All Cape Town Cycle Tour riders need to visit the Lifecycle Expo to collect their race packs. Cyclists will only be allowed access to the expo by means of their RaceTec chip. General admission tickets for the public are also available.

**Date:** 5-7 March 2015

**Venue:** Good Hope Centre, Cape Town

**For more info visit** [www.cycletour.co.za](http://www.cycletour.co.za).

### » PRONUTRO AFRICANX TRAILRUN

South Africa's premier three-day stage trail run, the ProNutro AfricanX Trailrun, presented by New Balance, returns to the Western Cape in March. Teams of two (male/female/mixed) will battle it out on routes that vary in distance, from 22 to 34km, on each of the three days. The three routes have been planned in such a way that the participants will have the opportunity to tackle a different breath-taking scenic route each day, allowing them to enjoy the full beauty of the Overberg.

**Date:** 13-15 March 2015

**Venue:** Houw Hoek Inn, Western Cape

**Follow Stillwater Trail Running on Facebook, @runtheafricanx on Twitter, or visit www.stillwatersports.com for more info.**

### » IMPI CHALLENGE GAUTENG #1

The Van Gaalen's Cheese Farm will be a hub of excitement when thousands of adventure seekers and lovers of the outdoors line up for the first event in the 2015 Impi Challenge season. The best dressed Impi and/or team stand the chance to win awesome prizes.

**Date:** 14 March 2015

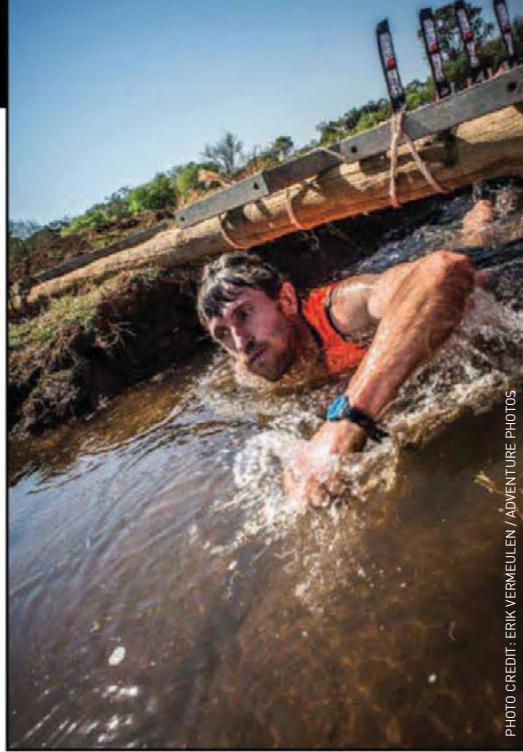
**Venue:** Van Gaalen's Cheese Farm, Hartebeespoort, North West Province

#### EVENTS:

- **Impi Elite:** 18-20km with 25 tough obstacles
- **Impi Challenge:** 10km with 18 obstacles
- **Impi Dash:** 5km with 12 obstacles
- **Impi Mini:** 1km with smaller supervised obstacles

**For more info visit** [www.impichallenge.co.za](http://www.impichallenge.co.za) or follow @impichallenge on Twitter.

PHOTO CREDIT : ERIK VERMEULEN / ADVENTURE PHOTOS



### » SUSAN DEACON 7 PASSES WEEKEND MTB EVENT

Taking place in April 2015, the Susan Deacon 7 Passes Weekend MTB event will start in George, and will follow the famous 7 Passes road through indigenous forests, pine plantations and private farmlands.

**Date:** 26 and 27 April 2015

**Venue:** George (start) to Knysna (finish)

**Enter at** [www.7passesmtb.co.za](http://www.7passesmtb.co.za) or go to [www.gardenrouteevents.co.za](http://www.gardenrouteevents.co.za) for more info.

### » ABSA CAPE EPIC

The world's premier mountain bike stage race returns to the slopes of Table Mountain for the 2015 prologue, before visiting Elgin, Worcester and Wellington on the way to the grand finale at Meerendal Wine Estate in Durbanville. The world's top riders will fight it out to win the Tour de France of mountain biking, a race across some of the most beautiful and rugged areas of the Western Cape. The total distance of the 2015 event is 739km, during which time riders will gain 16,000m of vertical ascent.

**Date:** 15-22 March 2015

#### VENUES:

- University of Cape Town (15 March)
- Oak Valley Wine Estate (16 – 18 March)
- Worcester (18 – 20 March)
- Wellington (20 – 22 March)
- Meerendal Wine Estate (22 March)

PHOTO BY CHERIE VALE / NEWSPORTMEDIA



PHOTO BY NICK MUZIK / CAPE EPIC / SPORTZPICS



# BEAT THE SLUMP

Fight fatigue, stress and energy loss.  
All day. Every day.<sup>1,2</sup>



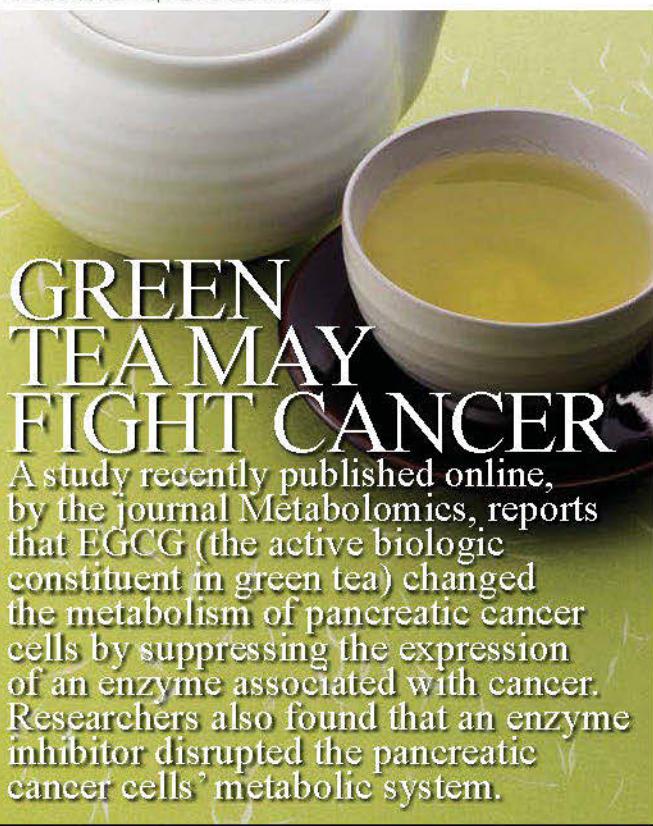
 **Slow-Mag®**

Ref 1. Garfinkel L, Garfinkel D. Magnesium 1985;4:60-72. 2. Albion Research Notes 1997;6(1).  Slow-Mag® Tablets. Each enteric coated tablet contains magnesium chloride 535 mg (equivalent to 64 mg elemental magnesium) H2/2499. Slow-Mag® Caps. Each capsule contains magnesium amino acid chelate 450 mg (equivalent to 45 mg elemental magnesium). Slow-Mag® Fizzy. Each Effervescent tablet contains elemental magnesium 122 mg and Vitamin C 150 mg. For further information, refer to the package insert approved by the Medicines Regulatory Authority. Merck (Pty) Ltd. Reg. No. 1970/004059/07, 1 Friesland Drive, Longmeadow Business Estate South, Modderfontein, 1645. Tel. (011) 372-5000, Fax. (011) 372-5252, SM-04.13.007, Report adverse events to drugsafety@merck.co.za or +27 11 608 2588 (Fax line).

# HEALTH NEWS

## [HEALTH TIPS FOR MEN]

BY MELANIE HEYNS, FEATURES WRITER



### GREEN TEA MAY FIGHT CANCER

A study recently published online, by the journal Metabolomics, reports that EGCG (the active biologic constituent in green tea) changed the metabolism of pancreatic cancer cells by suppressing the expression of an enzyme associated with cancer. Researchers also found that an enzyme inhibitor disrupted the pancreatic cancer cells' metabolic system.

## NEUROBION® VITAMIN B SUPPLEMENT

Neurobion®  
Tablets

B1  
100 mg

30



A deficiency of B vitamins is more common than we may think, with a 2009 study showing that up to 20% of the general population has a vitamin B12 deficiency. B vitamins are essential for normal growth, the formation of red blood cells and the maintenance of the nervous system. However, the human body cannot manufacture B vitamins, which means they must be derived from our diet, from sources such as animal protein, fortified cereal products or vitamin supplements like Neurobion®, which contains vitamin B1, B6 and B12. Symptoms of a vitamin B deficiency may include pins and needles or numbness in your hands and/or feet, weakness of hands and feet, abnormal gait (walking), forgetfulness, irritability or other mood disturbances, or paleness, fatigue and/or general weakness, which is associated with anaemia. If you suspect that you may have a vitamin B deficiency you should visit your healthcare provider and have a blood test done to check your levels.

**A mid-life crisis was traditionally thought to only affect older men, but a UK study has shown that men in their mid-thirties are also prone to the feelings of dissatisfaction and a greater awareness of their own mortality. [Health.com]**

## TEN THINGS THAT RAISE YOUR BLOOD SUGAR LEVELS

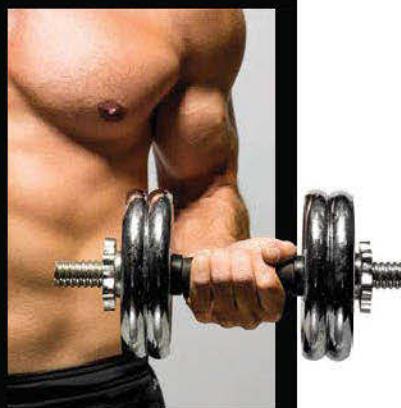
- 1 Skipping breakfast
- 2 Drinking coffee, even without sugar
- 3 Artificial sweeteners and refined sugar
- 4 Many sugar-free foods, which still contain starches
- 5 High fat meals
- 6 Colds and flu
- 7 Stress
- 8 Skimping on sleep
- 9 Certain OTC medications
- 10 Various alcoholic beverages



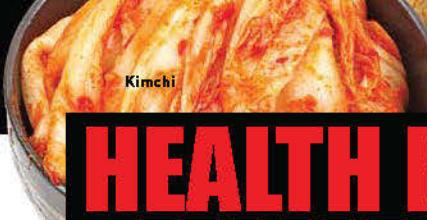
## 4 WAYS TO IMPROVE YOUR DIGESTION

- REDUCE STRESS
- CHEW YOUR FOOD PROPERLY
- DETOX
- TAKE A PRE- AND PROBIOTIC

## SIZE MATTERS



The main reason men plateau and stop gaining strength and size is because they go too heavy for too long. Your lifting programme should be periodised in such a way that you increase the weight you lift for a given rep range by 10% at least every three weeks. After 4-6 weeks of increases drop down to a weight that is slightly higher than what you initially started on and perform the same cycle of incremental increases. By the end of subsequent cycles you should theoretically be able to lift more than your previous maximum.



Kimchi



Miso



Sauerkraut

Amasi

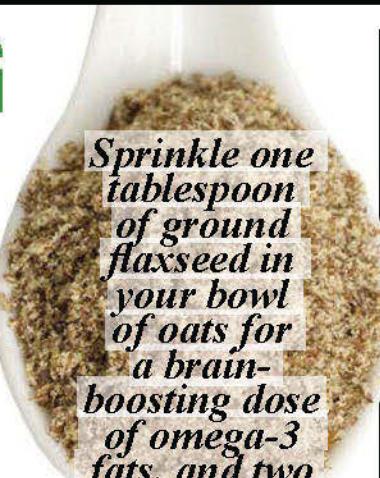
# HEALTH BENEFITS OF FERMENTED FOODS

AMASI, YOGHURT, KIMCHI, SAUERKRAUT, TEMPEH, MISO, KOMBUCHA

## CURBING CANCER

EXPERTS ESTIMATE THAT 80% OF ALL CANCERS CAN BE PREVENTED BY MAKING HEALTHY LIFESTYLE CHOICES, SUCH AS:

- ✓ Avoiding saturated and trans fats, which are said to fuel prostate cancer growth.
- ✓ Make foods such as soy, green tea and tomatoes a part of your diet.
- ✓ Ensure that your daily nutritional supplement contains high doses of the antioxidant selenium (200 micrograms) and vitamin E (800 IU), which have been shown to dramatically lower the risk of prostate cancer.



*Sprinkle one tablespoon of ground flaxseed in your bowl of oats for a brain-boosting dose of omega-3 fats, and two extra grams of fibre.*

The fermenting of microorganisms, which includes members of the *Lactobacillus* and *Bifidobacterium* species, provide health benefits for conditions such as irritable bowel syndrome, diarrhoea, constipation, and are believed to help prevent certain cancers. They also lower cholesterol and improve intestinal microflora.

## PROSUPPS NOW AVAILABLE THROUGH XTREME NUTRITION

ProSupps, billed as one of the fastest growing supplement brands in the US, is now available in South Africa, exclusively through independent supplement retailer, Xtreme Nutrition. ProSupps is committed to providing the highest quality products possible through the company's highly skilled and dedicated employees, and their unique, cutting edge product assortment. The company's aggressive research and development programme is helping it achieve its mission of becoming a leading global supplement provider. To find out more about ProSupps visit [www.prosupps.com](http://www.prosupps.com), or order your ProSupps products by emailing [sales@xtremenutrition.co.za](mailto:sales@xtremenutrition.co.za) or online via [www.xtremenutrition.co.za](http://www.xtremenutrition.co.za).

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3 LETTERS LBN, 3 TRAINERS SHAYE, PETER & RHEVAN, 1 PASSION

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[WWW.FACEBOOK.COM/LBNFITNESSSTUDIO](http://WWW.FACEBOOK.COM/LBNFITNESSSTUDIO)



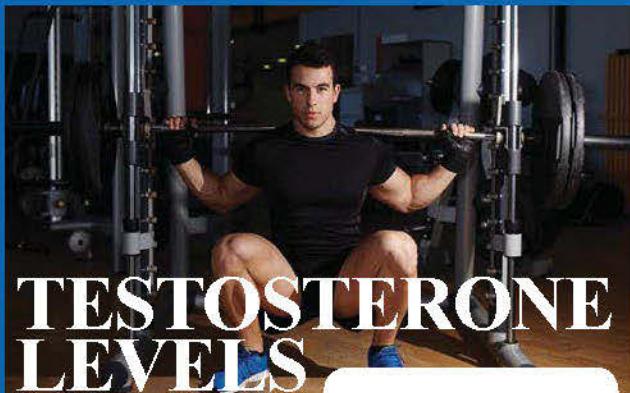
+27 (0)82 406 2121





## SEVERIN SMOOTHIE MAKER MIX & GO

The Severin Smoothie Maker comes with an all-in-one blender and drink holder, and is ideal for travelling. The Severin Smoothie Maker is dishwasher friendly and allows for quick and easy cleaning of the stainless steel blade. It has one speed setting with a safety cut-out, and prepares creamy, healthy and vitamin-rich smoothies with the push of a button. *Available from [www.Loot.co.za](http://www.Loot.co.za) at the RRP of R599.*



## TESTOSTERONE LEVELS

A study published in the Journal of Clinical Endocrinology and Metabolism tracked 1,500 men and found that 1 in 4 men over the age of 30 suffers from low testosterone. The Mayo Clinic states that men's testosterone levels begin to decline by about 1% every year after the age of 30.

**Weight training and other forms of high intensity exercise are the ideal ways to increase testosterone production naturally.**

### Symptoms of testosterone deficiency include:

- Lethargy
  - Loss of sex drive
  - Depression
  - Insomnia
  - Fewer nocturnal erections
  - Decreased motivation or self-confidence
  - Reduced strength
- 
- A feeling of heaviness in the scrotum
  - A dull ache that's centred in the abdomen or groin
  - Pain in either testicle or the scrotum
  - Breast enlargement or tenderness
  - An overall feeling of fatigue



## FRESH EARTH BAKE HOUSE LAUNCHES GLUTEN-FREE READY MIX RANGE

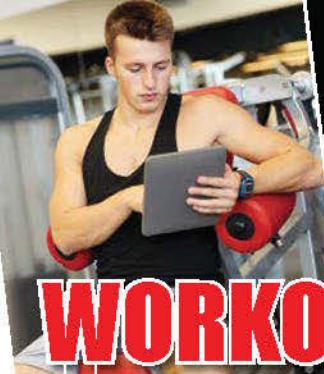
Fresh Earth Bake House, a certified gluten-free bakery based in Johannesburg, has launched a range of Ready Mixes, made with the best quality ingredients available, and no unnatural flavours, colourants or unnatural preservatives. Developed by Matthew Ballenden, nutritional chef and owner of the bakery, the range includes sponge cake and bread ready mixes, which are quick and easy to make. By adding seeds, dried fruits or nuts and using virgin coconut oil, organic eggs and milk, it adds to the nutritional value of these products.

*Fresh Earth Bake House also produces the Spar brand gluten-free range, as well as a wide range of gluten-free products for Dis-Chem Pharmacies. Additionally, the bakery produces gluten-free baked goods under the Fresh Earth Bake House label for Pick 'n Pay. Other stockists include Wellness Warehouse, Life Bake, Melissa's and other independent retailers. The Fresh Earth Bake House is also the first exclusively gluten-free bakery in South Africa to be ISO 22000 FSSC (Food Safety System Certification) compliant. For more info visit [www.freshearthbakehouse.co.za](http://www.freshearthbakehouse.co.za).*



## DID YOU KNOW?

YOUR KITCHEN SPONGE GENERALLY CONTAINS MORE GERMS THAN ANY OTHER UTENSIL IN YOUR HOUSE. THAT'S ACCORDING TO GERM GURU CHARLES GERBA, A MICROBIOLOGIST AT THE UNIVERSITY OF ARIZONA IN TUCSON, WHO STATES THAT "ABOUT 15% OF SPONGES CONTAIN BACTERIA THAT CAN MAKE YOU ILL".



# KEEP A WORKOUT DIARY

Keep track of your workouts by noting down the exercises, sets, and reps performed. This will help you to see how you've progressed and strive to constantly improve.

## BEST PRE-RUN FOODS FOR AN INTENSE TRAINING SESSION

226g Greek yoghurt

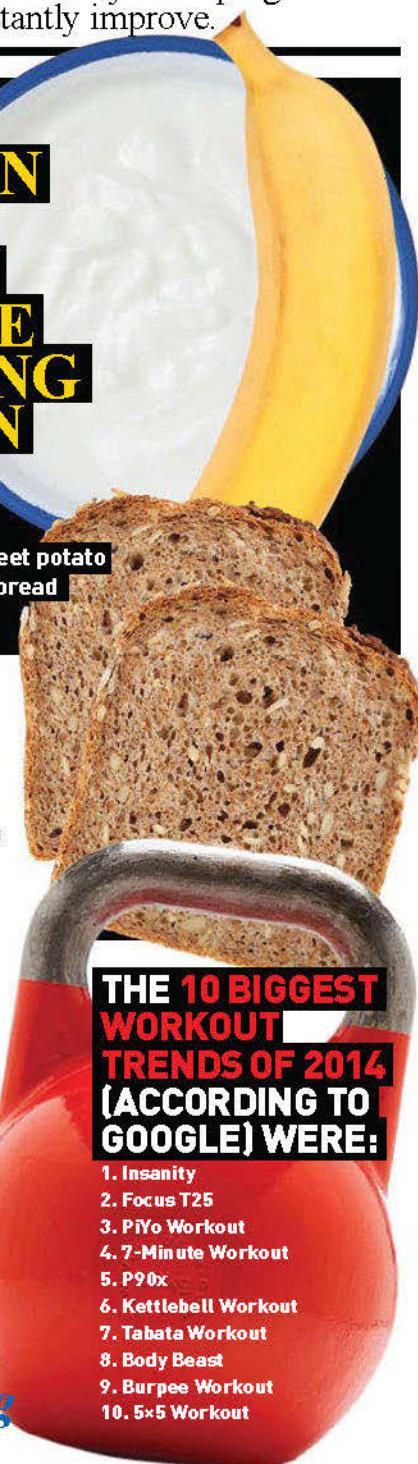
1 banana

1 cup cooked oats

1 medium cooked sweet potato

2 slices wholewheat bread

½ cup cooked quinoa



*To keep your bones strong, consider taking 1,000 milligrams of calcium combined with 400 IU of vitamin D. This combination has been shown to enhance the body's ability to absorb calcium, the bone-building nutrient.*

### THE 10 BIGGEST WORKOUT TRENDS OF 2014 (ACCORDING TO GOOGLE) WERE:

1. Insanity
2. Focus T25
3. PiYo Workout
4. 7-Minute Workout
5. P90x
6. Kettlebell Workout
7. Tabata Workout
8. Body Beast
9. Burpee Workout
10. 5x5 Workout

**CHROME**  
SUPPLEMENTS & ACCESSORIES

GET YOUR  
**FREAK** ON  
WITH AMPLIFY



Add Ampli-Pump 3.0 to your **Pharmafreak Superfreak Hybrid Pre-Workout** and Amplify your results

PERFORMANCE

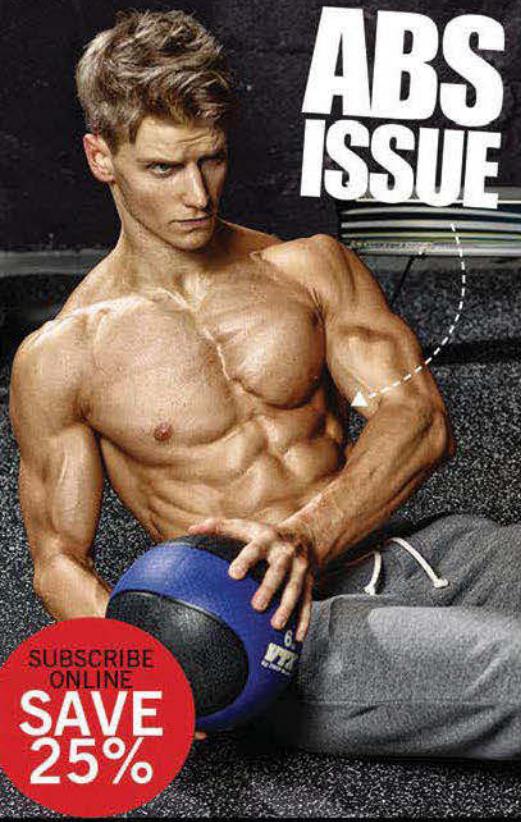
MUSCLE

HEALTH

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# ABS ISSUE



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## XTREME NUTRITION OPENS 17TH STORE

Xtreme Nutrition recently celebrated the launch of its 17th store, cementing the brand's position as a leading independent supplement retailer in southern Africa. The brand's national footprint includes stores in all the major provinces, including Gauteng, the Western and Eastern Cape, and KwaZulu-Natal, as well as a store in Windhoek, Namibia. Every store stocks the widest range of top international and popular local supplement brands, and will beat any price. For more info email [sales@xtemenutrition.co.za](mailto:sales@xtemenutrition.co.za) or shop online at [www.xtemenutrition.co.za](http://www.xtemenutrition.co.za).



## BULGAR WHEAT

Bulgur wheat is a whole wheatgrain that has been cracked and partially pre-cooked. As a whole grain it is naturally high in fibre, yet contains few calories, and is also suitable for vegetarian and vegan diets. You can use it just like rice or couscous, or any other whole grain, such as barley or quinoa. Products like Pouyoukas bulgar wheat are easy to prepare – as simple as adding two parts boiling water to one part bulgar wheat in a bowl, covering with a lid or plate and letting it sit for half an hour.

*For more cooking tips and recipes, visit [www.pouyoukas.co.za](http://www.pouyoukas.co.za), follow PouyoukasFoods on Twitter and like Pouyoukas on Facebook.*



## CACTIC FITNESS: SUPPLING PROUDLY SOUTH AFRICAN GYM EQUIPMENT

Cactic Fitness designs and manufactures innovative, multi-functional gyms. These gyms fold away, to no more than 10cm against the wall, and can carry up to 700kg. The gym caters for all disciplines of training including, but not limited to, functional training, strength and conditioning training, weight training, callisthenics, resistance training and interval training. This gym is suitable for the entire family. Get a full body workout at home, on a gym that doesn't take up floor space, and doesn't limit your exercise possibilities. Build your own gym to suit your needs and budget. Visit Cactic Fitness on Facebook for daily workouts. Cactic Fitness is a Proudly South African company that loves fitness and manufacturing. View all products and prices online at [www.cacticfitness.co.za](http://www.cacticfitness.co.za) or contact 011 394 5720 or [fitness@cactic.co.za](mailto:fitness@cactic.co.za) for a free quote, and to stand a chance of winning a gym.

## BREVILLE MAKES JUICING & BLENDING EASY



The Breville Juice Fountain extracts up to 20% more vitamins and minerals than other juicers, according to a study by Australia's National Measurement Institute.

**Available from**  
**@home stores at the**  
**RRP of R1,899.**

The unique blade design on Breville Kinetix blenders whip up and aerate from below, while the central blades pull down, crush and chop what's on top for lump-free smoothies.

**Available from**  
**@home stores at the**  
**RRP of R2,899.**

# INTRODUCING the SHIELD™



**INCLUDED:**  
SEAL TIGHT CONTAINERS (BPA FREE)  
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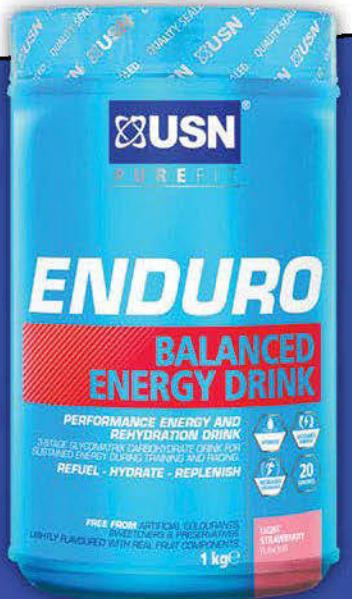
Available at  
**CHROME**  
SUPPLEMENTS & ACCESSORIES



**Dis-Chem**  
PHARMACIES  
Pharmacists who care  
selected stores only

# SUPPLEMENTS

[ MUSCLE > STRENGTH > NUTRITION ]



## USN ENDURO

Forming part of the new Purefit range of natural supplements, USN Enduro has been scientifically formulated to provide athletes with a light, refreshing and functional sports drink. It combines high, intermediate and low Glycaemic Index (GI) carbohydrates, which have been shown to promote performance and improve exercise tolerances and muscle recovery during exercise. This unique combination of performance ingredients assists with the sustained and continuous supply of energy to optimally fuel users for optimal performance, while still promoting stable blood sugar levels. Lightly flavoured with real fruit components, this product is free from artificial colourants, sweeteners and preservatives.



## EFAFAMOL EFA-BASED BRAND LAUNCHES IN SA

Efamol, purportedly the world's most-researched essential fatty acid molecule, is a 'good' fat that has been developed to help every cell in the human body function optimally. Efamol is available in six products that help manage specific conditions, including Efamol Brain Concentrate Chewies, Efamol Active Memory, Efamol Brain Concentrate Adults, Efamol Evening Primrose Oil, Efamol Mother & Baby, and Efamol Vision.

## OMEGA CARO-E

Omega Caro-E, a locally developed and manufactured food supplement, endorsed by CANSA, is now available at local pharmacies across the country. Developed by the Functional Foods Research Unit at the Cape University of Technology, Omega Caro-E is a unique formulation of fish oil, 11 different forms of carotenoids, and five different forms of vitamin E. Contains no ethyl esters, artificial flavourants, colourants or preservatives, heavy metals (above detectable ranges), pesticides or organic solvents.



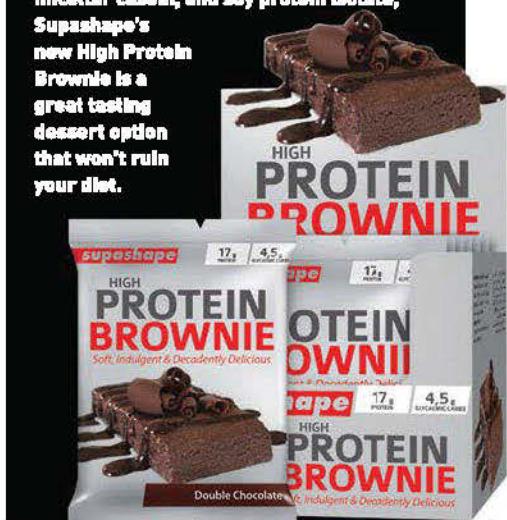
## WELLMAN® BOOST

Wellman® Boost is an advanced vitality and energy release effervescent tablet that contains a comprehensive formula of vitamins and minerals. Available from Dis-Chem and community pharmacies nationwide, or online at [www.vitabiotics.co.za](http://www.vitabiotics.co.za).



## SUPASHAPE HIGH PROTEIN BROWNIE

Offering a blend of protein sources, including oat protein, whey protein concentrate, micellar casein, and soy protein isolate, Supashape's new High Protein Brownie is a great tasting dessert option that won't ruin your diet.



## Cipla launches CNLink™

Cipla Nutrition recently launched CNLink™, a digital online sales platform designed to give certified personal trainers and sports coaches instant access to a full range of pharmaceutically developed nutritional supplements and selected Cipla over the counter (OTC) products. The platform, which is mobile and tablet enabled, allows customers to order Cipla products directly from their personal trainer or sports coach, and they will receive the products at their home or office within three days. The platform is also unique in that it offers its exclusive members (personal trainers and sports coaches) a revenue share option.



## PURE NUTRITION TECHNOLOGY

Pure Nutrition Technology offers nutrition products that aim to improve performance and training intensities, maximise recovery, and maintain optimum health. Based on current research, all products in the range are

outcomes-based and formulated with the highest quality ingredients to achieve optimum results. All products are soya-free, sugar-free, gluten-free, and are free of substances listed on the World Anti-Doping Agency's

prohibited list. The range includes Pure Acti-Man, an all-in-one daily pack for active men. Each multipack contains one vitamin and antioxidant capsule, two essential fatty acid capsules, and one mineral capsule.

# ENERVIT PRE SPORT

Enervit Pre Sport is one of the first scientifically designed low GI foods that gives you just the right boost of energy before training or competitions. As it's fat free, this carbohydrate-rich food is easily absorbed, with no digestive issues. Isomaltulose, a source of glucose and fructose, makes up 30% of the product's total sugar content. Eating foods that contain isomaltulose raises blood glucose levels more slowly than other foods that contain sugar. Energy is therefore released gradually for sustained performance. Each 45g serving is available in an easy-to-eat, orange-flavoured jelly.



## OMNIFLEX

OmniFlex, by Ethical Alternative Products, combines five clinically proven ingredients at effective levels, in a single, easy-to-swallow softgel capsule, to help alleviate joint pain. The product does not contain glucosamine or chondroitin, like most common joint support products. Instead, a combination of ingredients, including fish oil, rose hip, krill oil, BioCell collagen type II, and pine bark extract are used to achieve effective relief of joint pain and stiffness. These natural substances control inflammation, lubricate joints and rebuild cartilage.



## WELLMAN® DRINK

Wellman® High Performance Drink is a lightly carbonated apple and grape juice drink that contains botanical extracts and vitamins. The drink doesn't provide a short-term artificial energy boost from excessive calories, sugar and synthetic caffeine. Instead, it contains low levels of natural caffeine from guarana and green tea extract, in addition to nutrients that contribute to normal energy release, including vitamins B6 and B12. Wellman® Drink also contains zinc, which boosts immune function.

Available from Dis-Chem and community pharmacies nationwide, or online at [www.vitabiotics.co.za](http://www.vitabiotics.co.za).

## SUPASHAPE ZERO CALORIE CAFÉ INFUSIONS SWEETENER

One 45ml pack of Supashape's new Zero Calorie Café Infusions Sweetener provides sufficient flavouring and sweetening for over 50 200ml cups of coffee, or your favourite beverage. Simply squeeze the sweetener into a cup of your favourite hot beverage to meet your desired sweetness preference. While the general recommendation is approximately 11 drops (equivalent sweetness to 1tsp sugar) to every 100ml of beverage, the amount you use is completely dependant on your individual taste preference.

Available in Caramel, Hazelnut, and Sweetener flavour options.



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**[AESTHETICALLY SPEAKING]**

BY Mark Pearce, fitness model and Muscle Works sponsored athlete

**ABOUT MARK PEARCE:**

Mark "lives for fitness". He was the face of one of South Africa's biggest sports nutrition companies for five years, making his blonde hair and abs synonymous with fat burners and diet products. In 2007 he won a "look" competition with a leading global men's magazine title. He has subsequently appeared on the cover of the local version twice and, more recently, on the cover of a German issue.

**EXERCISE AND EQUIPMENT SELECTION**

# TRAINING FOR AESTHETICS (3)

## **I**N THIS INSTALLMENT OF OUR SERIES ON TRAINING FOR AESTHETICS, I WILL BE DISCUSSING EXERCISE AND EQUIPMENT SELECTION.

Exercises and the types of equipment you choose to use are generally interchangeable, and can be used in conjunction with any of the rep ranges discussed in our previous column. When it comes to developing your physique there is no form of training that is technically a waste of time (unless your effort and intensity are lacking). However, there is a way to derive maximum benefit from the session, to reach your goal, when selecting certain exercises.

### **GAINING SIZE**

As previously discussed, the optimal rep range for gaining size is 4-6 reps. With this in mind, the goal is to fatigue the targeted muscle with low rep sets using the heaviest weight possible.

Where many people miss the mark as far as this concept goes is that they often only lift heavy weights for specific exercises, and don't aim to lift the heaviest possible weights across all exercises. As an example, if someone is able to bench press 145kg for six reps they may only be able to dumbbell press 55kg in each hand for the same number of reps. This means that, per rep, you're moving a combined weight of 110kg when using dumbbells, compared to the 145kg with an Olympic bar.

Why is this? Well, exercises performed with the bar use fewer stabilising muscles than dumbbells. This makes it the ideal

piece of equipment to maximise strength and size gains as you're able to lift more weight per rep. This is generally the case for every exercise, with the possible exception of leg presses as opposed to squats.

### **TRAINING FOR AESTHETICS**

The mid rep range of 10-12 reps is where most guys work to develop the ultimate physique. In this rep range dumbbells are the key to maximising muscular development. You can use bars in this rep range too, but dumbbells stress the accessory and stabiliser muscles that support the primary movers. For this reason, my second exercise selection in any workout will usually

move to dumbbells, unless I'm training legs (in this instance my second exercise would be a squat).

### **HIGH REP TRAINING**

High rep training, in the 20-25 rep range, requires the use of lighter weights, which enables you to select a wider variety of equipment and exercises, as the risk of injury is so much lower than during heavy weight training.

It is also beneficial to use other tools that can help to sculpt your physique when working in this rep range. The constant tension of cables, for instance, offers the ideal stimulus to develop a more defined and 'chiselled' look to muscles. By maintaining tension on the muscle throughout the eccentric and concentric phases of a cable exercise you promote greater blood flow to the targeted muscle, which helps to boost pumps, and aids recovery and the removal of exercise-induced metabolites. The ability to 'squeeze and hold' the peak contractions of reps also promotes the development of more defined muscles, without adding much size.

Bodyweight exercises are

another form of training that is ideal for this rep range. Most bodyweight exercises are functional, which means they incorporate a number of muscle groups. This makes them an ideal means to cross train for increased fitness and muscle endurance when used in conjunction with the higher rep ranges.

While this is a pretty broad, generalised overview, it gives you a better idea of the types of exercises you should be selecting to achieve specific aesthetic goals. This should be enough to form a solid foundation in terms of exercise prescription, and equipment selection in your quest for the ultimate physique.

As a parting thought, I would like to share the following words of motivation, especially if your New Year's resolutions have fallen by the wayside this early in the year. Results are a product of consistency, not isolated effort. It's probably the least talked about aspect of health and fitness, and achieving the body you've always dreamed of, but consistency in your approach is ultimately the key to lasting success. As we move into the month of March bear in mind that it often takes three months, in general, before you start noticing visible results in the mirror, not just a shift in the numbers on the scale. So don't give up just yet! ■

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and one of our experts will  
answer it for you.

## MEN'S FITNESS QA

# BENEFITS OF SPINNING

QUESTION ANSWERED BY PEDRO VAN GAALEN, EDITOR

**Q**I would like to boost my fitness levels, but I'm not sure what form of cardio I should be doing in the gym. I train with weights 2-3 times a week, and have tried running on the treadmill, but previous injuries prevent me from going too fast. The other option I have been considering is spinning. To gain a more thorough understanding of the benefits of spinning I would appreciate it if you could tell me the pros and cons of this form of cardio. *Shaun De Kock*

**A**A spinning bike has a weighted flywheel which simulates the effects of inertia and momentum experienced when riding a real bicycle. This makes it more effective than a traditional

stationary bike. The design of a spinning bike also allows riders to adopt various positions on the bike, which makes it more practical in terms of varying a workout.

**Other pros of spinning include:**

- The flywheel increases the intensity and effectiveness of the workouts to help boost fitness and blast more calories than a stationary bicycle can.
- Spinning is low impact, so it's easier on your joints than running, which may help to alleviate the issues with your previous injury.
- The flywheel enables riders to reach much higher cadences than stationary bikes, which helps with speed and endurance conditioning.
- Spinning more closely simulates the forces and resistance experienced during cycling, which makes it a great option for indoor cycling training. In other

words, the effects are directly transferable to the road or mountain bike.

- Your ability to stand and change hand positions on the spinning bike means that more of your upper body can be incorporated into a spinning session.

**There are very few cons associated with spinning.** The main one is that the non-weight bearing nature of the exercise means that it does little to improve bone density. However, as you combine spinning with weight training, this is not something you should be concerned about. The other con is that excessive cycling, in any form, can shorten your hip flexors. As such, I would recommend that you combine your weight training and spinning with a suitable stretching and mobility routine that targets your hip area.



## WEIGHT-LOSS PLATEAU

QUESTION WAS ANSWERED BY MARIO VAN BILJON NHDIP: MICROBIOLOGY

**Q**Having lost some initial weight after starting a healthy eating plan and regular exercise programme, I now seem to be stuck at my current weight. I currently do a combination of weight training and high intensity interval training cardio. I eat relatively cleanly, having cut sugar from my diet. I only drink water and a cup of coffee or two in the morning. What do you think could be the problem? *James*

**A**Provided you're training with consistency and sufficient intensity, your approach to exercise seems well suited to your goals. I would advise that you stick to compound weight training exercises to burn as many calories as possible, with either a full body routine done at each session, or an upper body, lower body split, depending on the number of days you train each week.

Without more in-depth information on your diet it is difficult for me to make recommendations, but in my experience, most weight loss plateaus are as a result of your dietary choices. Accordingly, I am willing to make a few general recommendations that should get the needle on your scale moving in the right direction again.

### 1) YOU'RE PROBABLY EATING TOO MANY CARBS

Most people, especially those with a history of being overweight, are likely insulin resistant to some degree. This means they have a poor tolerance to carbs, and are simply not physically active enough to be able to eat that many carbs. If you want to get lean then cutting carbs is usually one of the first and most important steps you need to take. That doesn't mean you can't have any, but you need to make smart choices. Any carbs you do eat need to be consumed at the right times as well. Moderate any processed carbs in favour of more fibrous carbs such as vegetables and salads, and include more lean proteins such as chicken breast, ostrich, fish, egg whites, whey protein.

### 2) YOU'RE POSSIBLY EATING CARBS AT THE WRONG TIME

If you're carrying an above average level of body fat, then pretty much any time of the day is the wrong time to eat too many carbs. In this case I would recommend sticking predominantly to vegetables, and possibly some brown basmati rice, rolled oats or sweet potatoes after training. When you get down to lower body fat levels you should be able to increase the amount of carbs in your diet slightly.

### 3) YOU'RE PROBABLY EATING TOO MUCH FRUIT

Make no mistake, fruit is healthy and can be eaten by lean individuals in limited amounts. However, any excessive fruit sugar (fructose) consumption quickly leads to fat gain. Fructose

is metabolised in the liver and once liver glycogen stores are full, any additional fructose consumption is readily converted to triglycerides and stored as body fat. I would suggest that you limit your fruit intake to one small serving per day at most, at least until you reach your goal weight. Just be sure to up your vegetable consumption to meet your daily micronutrient requirements.

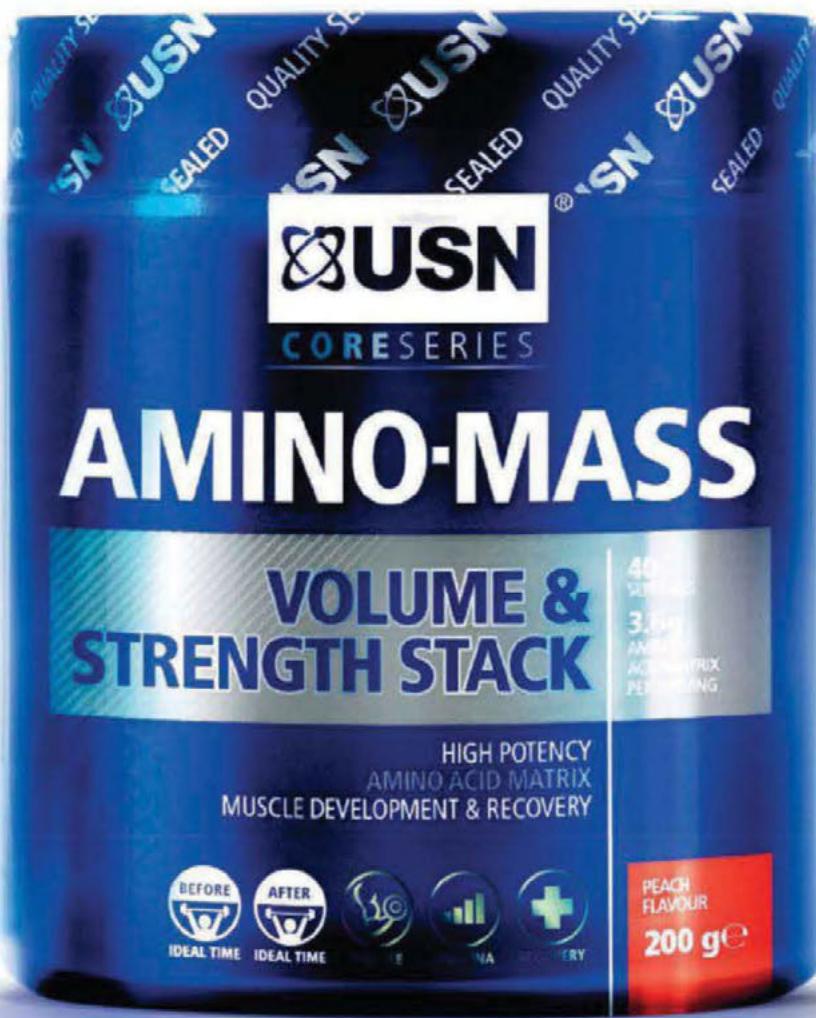
### 4) YOU MAY BE EATING TOO MUCH FAT

Don't assume that if you cut carbs then you're good to go and that there's nothing else to worry about. You can't neglect paying attention to your dietary fat intake, as it relates to your overall calorie consumption. Fat contains nine calories per gram and, at the end of the day, your total calorie intake still matters. If you're eating more calories than you burn each day you're never going to achieve your goal. Aim to derive up to 15-20% of your calories from healthy fats like fish, game, omega-rich eggs, olive and flax seed oils, among others. Just be careful about consuming too much dietary fat thinking that low carbs automatically leads to fat loss.

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# FITNESS TECH

[ THE LATEST GEAR ]

BioFUSE  
Fitness Fins

speedo

BioFUSE  
Training Fins

## SPEEDO TRAINING FINS

Speedo recently launched two BioFUSE Fin training aids. The Speedo BioFUSE Training Fin is designed to increase propulsion, strengthen leg muscles and help improve swim stroke. It increases focus on the upper body due to the elevated position encouraged by the fin.

Made from 100% silicone, with a dual-density design that offers a stiff blade and a soft comfortable foot pocket, the Training Fin is the ideal training aid for overall swim technique and increased ankle flexibility. The Speedo BioFUSE Fitness Fins are short, dual-density fins with stiff blades and easy-fit back straps for maximum water resistance. These fins help strengthen leg muscles, improve endurance, increase workout speed, develop ankle mobility and boost lower body fitness.

Available at the Speedo Concept Store at Canal Walk and at most Speedo stockists nationwide at an RRP of R570 (BioFUSE Training Fins) and R470 (BioFUSE Fitness Fins).

## GARMIN FORERUNNER 920XT

Garmin recently launched the Forerunner 920XT, a multi-sport GPS watch that can record detailed metrics for swimming, biking and running. Its slim profile and hinged watch bands offer a comfortable fit, and its high-resolution colour display makes it easy to view stats at a glance. Includes advanced features such as running dynamics, VO<sub>2</sub> max and recovery estimates, live tracking and smart notifications, and it has a daily activity tracking feature to monitor steps and calories burnt daily. Athletes can automatically upload workouts to the Garmin Connect Mobile app on a smartphone using Bluetooth technology or Wi-Fi. It also keeps users connected with smart notifications when in range of a paired Bluetooth smart device. In UltraTrac mode the device's battery life can be extended from 24 hours to 48 hours in GPS mode.



Available in black/blue or red/white at a RRP of R7,299 (premium HRM bundle).

## GARMIN VIVOSMART

The Garmin vivosmart is an updated activity tracker that displays smart notifications. Users can achieve their health and wellness goals, all while staying connected by receiving vibration alerts for calls, SMSes, calendar reminders and emails. Similar to the vivofit and Forerunner 15, the vivosmart records activity levels and encourages users to live a more active lifestyle by displaying a personalised daily goal each morning, and reminding them when it's time to move. It is easy to operate, and has a touchscreen which displays time, steps, distance, calories, the move bar, goal countdown and more. The device has a 5ATM water rating, and a battery that lasts up to seven days.

Available in purple, black, and slate, in a small or large band size, at a RRP of R2,849, and R3,349 for the HRM bundle.



## TOMTOM GOLFER

TomTom recently launched the new TomTom Golfer, a GPS sports watch designed to make it easy for golfers to improve their game. The device uses graphics and an extra-large screen to clearly show key golf course data from more than 34,000 golf courses across the globe. Course updates are delivered wirelessly via a smartphone app, ensuring golfers play with the up-to-date course information. Course graphics clearly show accurate distances to hazards and lay-ups, and the best approach to the green. The device uses GPS technology to automatically recognise nearby courses and

find the next hole. A golfer can also keep track of the score, distance and time of a round.

## JABRA SPORT PULSE WIRELESS

The Jabra Sport Pulse Wireless stereo earbuds offer an integrated heart rate monitor, and a compatible Sport Life App. This "all-in-one training solution" combines an in-ear biometric heart rate monitor built to withstand intense training. The premium Dolby-enhanced wireless sound experience includes sound and real-time voice coaching through the Sport Life App. The earphones are lightweight, and sweat and rain proof, and the 'Ergonomic Audio Response Science' technology ensures a secure and comfortable fit.



Available at a  
RRP of R2,399.

## FITNESS TECH RELEASES AT CES 2015

The start of every year is a busy time for the consumer electronics industry as the biggest trade show on the planet, CES, takes place in Las Vegas every year in January. Fitness technology has been a key trend for the past few years, and 2015 was no different. To give you an idea of the main trends to expect for the remainder of the year in the fitness technology space, these were the highlights:

**SONY SMART B-TRAINER:** This wearable Walkman music player includes Bluetooth, NFC and storage for on-board music playback, but also comes with added activity tracking intelligence. The device boasts GPS, an accelerometer for step counting, and heart rate monitoring in the right earpiece of the headphones. All the collected data is then synched with a smartphone, providing metrics such as distance, time, heart rate and calories burnt. Audio fitness coaching is also available, with real-time tips on when to speed up or slow down to stay in the right zones to achieve a desired workout or training goal.



**HEALBE GOBE:** The Healbe GoBe is a fitness tracker that purportedly tracks calorie intake 'through your skin' via a wrist-based sensor – no manual input required. This is achieved through 'Flow Technology', a patented innovation that analyses blood flow and pulse, fluid levels (through bioelectrical impedance testing) and activity levels, to judge how many calories you've consumed and burnt. It can also monitor heart rate and track activity. Visit <https://healbe.com> for more info. \$299.99

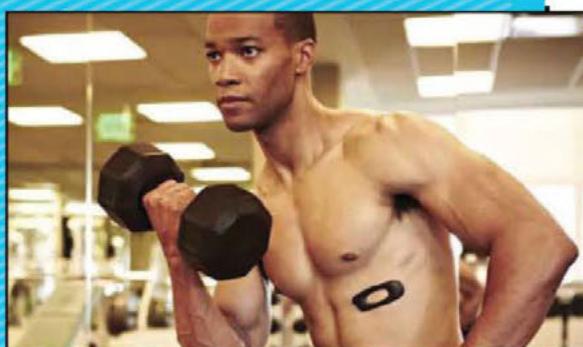


**TAO CHAIR:** The Tao chair is an 'invisible gym in your living room'. This connected home-gym-in-a-chair provides a full workout thanks to embedded sensors that provide feedback to the 'Variobics System', creating variable resistance in the chair's arms and legs that a user can push against. This isometric exercise can be done while watching TV, and the results are sent to your smartphone. Visit <https://taochair.com> for more info.



**MIO ALPHA 2:** The Mio Alpha 2 is a smart sports watch that uses a patented optical heart rate monitor for accurate ECG readings from your wrist, and an internal accelerometer to measure pace, speed and distance. These features enable users to run without a smartphone or heart rate strap. Visit [www.mioglobal.com](http://www.mioglobal.com) for more info. \$199

**AMPSTRIP:** AmpStrip by FitLinx is a small, thin, sensor-filled adhesive strip that athletes can wear on their torso 24/7. It continuously monitors a user's heart rate, and provides feedback about performance and recovery, via Bluetooth to a smartphone and companion mobile app. This helps users make better decisions about the type and intensity of each day's workout. For more info visit [www.ampstrip.com](http://www.ampstrip.com).

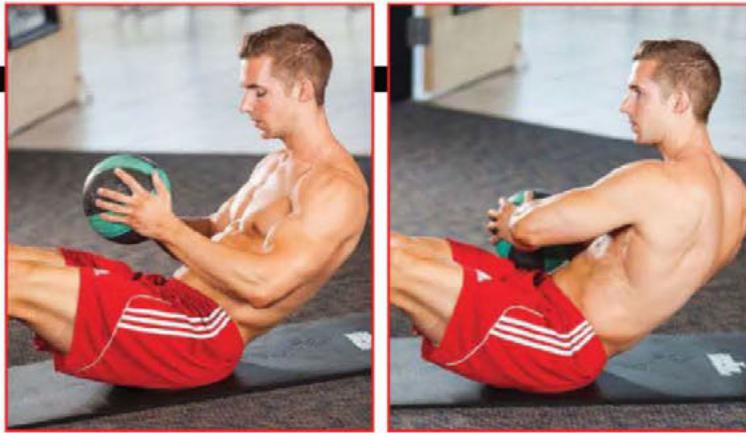


## [EXERCISE GUIDE]

FOCUSSED MOVEMENT TRAINING

### THE MOVE

# Balancing seated torso twists with ball



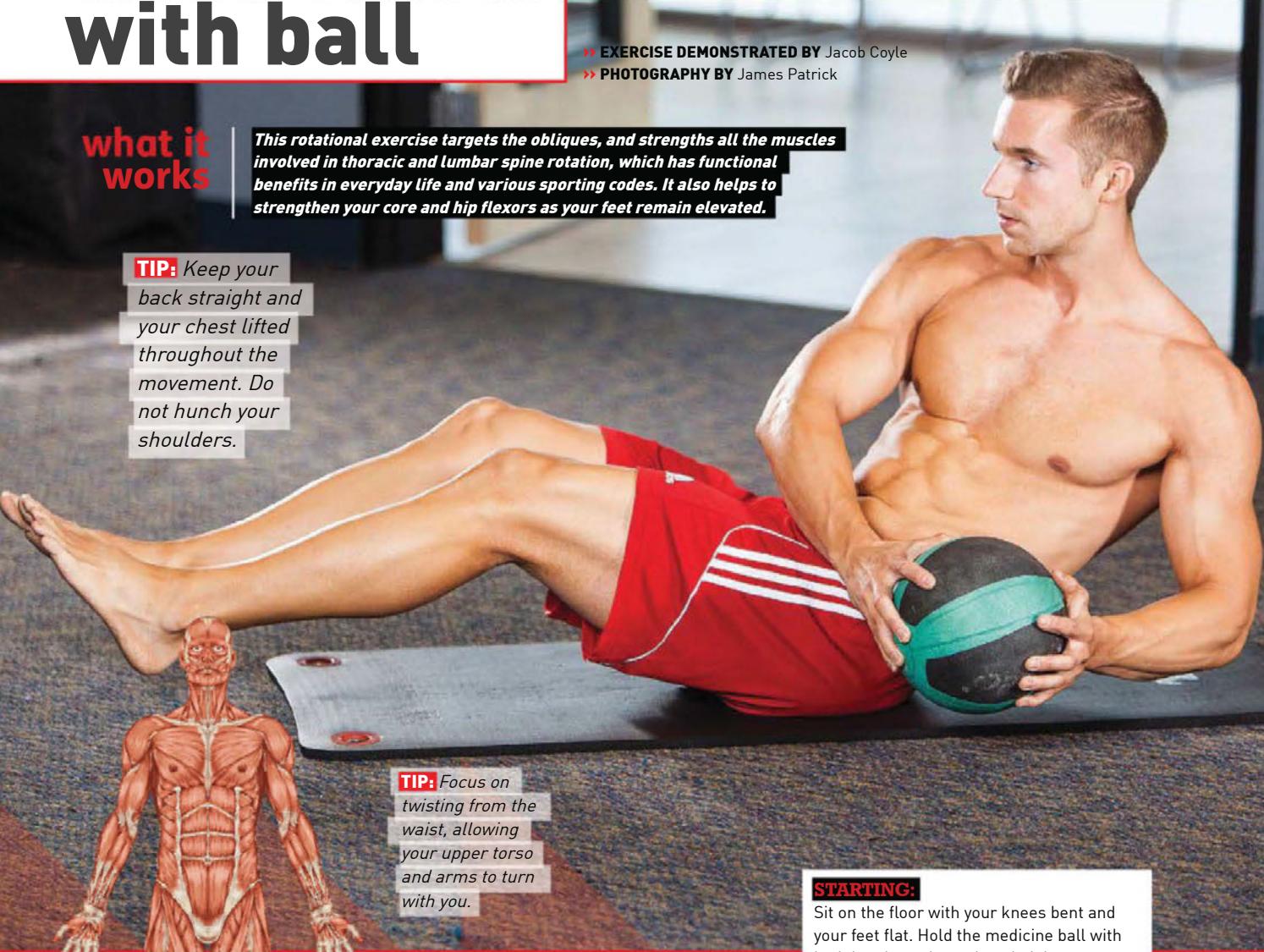
» EXERCISE DEMONSTRATED BY Jacob Coyle  
» PHOTOGRAPHY BY James Patrick

### what it works

*This rotational exercise targets the obliques, and strengthens all the muscles involved in thoracic and lumbar spine rotation, which has functional benefits in everyday life and various sporting codes. It also helps to strengthen your core and hip flexors as your feet remain elevated.*

**TIP:** Keep your back straight and your chest lifted throughout the movement. Do not hunch your shoulders.

**TIP:** Focus on twisting from the waist, allowing your upper torso and arms to turn with you.



### MUSCLES TARGETED

**PRIMARY:** Obliques

**SYNERGISTS AND STABILISERS:** Core and rotational muscles - psoas major, quadratus lumborum, multifidus, iliocostalis lumborum, iliocostalis thoracis, rotatores, intertransversarii.

### STARTING:

Sit on the floor with your knees bent and your feet flat. Hold the medicine ball with both hands at about chest height.

### THE MOVEMENT:

Brace and engage your core as you lift your feet off the floor and lean back slightly, balancing on your glutes. Rotate your torso to the left, then tap the ball on the floor just outside of your left hip. Pull the ball back into your chest, then rotate to the right and tap the ball to the floor in the same manner. That's one rep. Continue alternating sides each time for a total of 20 reps. ■

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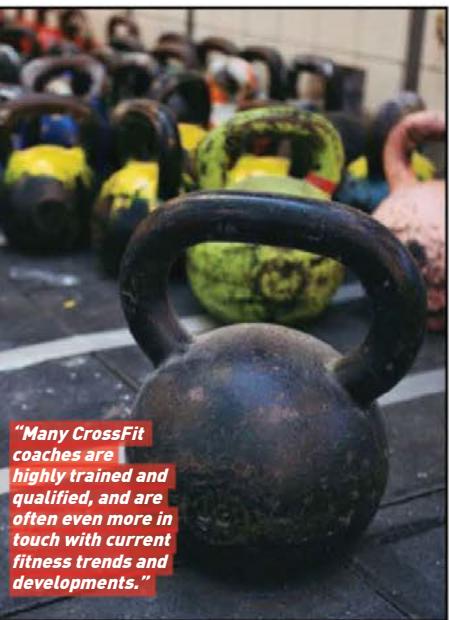
Rehabilitation Benefits with No Strain on Joints & Only Activates Skeletal Muscle Groups

*Move With Technology*

# CrossFit IS HERE TO STAY



» BY Julian Reichman-Israelsohn, owner and head trainer at CrossFit Platinum



**"Many CrossFit coaches are highly trained and qualified, and are often even more in touch with current fitness trends and developments."**

**TO SUPPORT THIS STATEMENT, I HAVE TAKEN THE TOP TRENDS FROM THE ACSM 2015 TRENDS SURVEY AND SHOWN HOW CROSSFIT RELATES OR INCORPORATES THESE ELEMENTS...**

**TREND #1: Bodyweight training** – The top trend for 2015 due to the surge in calisthenics training is a large component of CrossFit, it's just referred to as gymnastics in the box. Many CrossFitters, from elite level to the novice, strive to achieve various goals with regard to gymnastics, be it a soccer mom's first pull-up, or an elite athlete rapping out free handstand push-ups.

**TREND #2: HIIT** – Second in the trend list, but on its way out according to Thompson. Regardless, many WODs (workout of the day) include HIIT structures for metcon (metabolic conditioning) workouts. This is where the magic of CrossFit lies; intensity. The bulk of CrossFit metcons are 5-15 minutes long, and include a variety of weight training, gymnastic movements, and cardiovascular elements, and various combinations of the three, which keeps the training fresh, and the stimulus on the body is ever-changing. This keeps the body constantly adapting, and therefore improving.

**TREND #3: Educated and experienced fitness professionals** – While this probably refers to biokineticists and the like, many CrossFit coaches are also highly trained and

**H**IGH INTENSITY INTERVAL TRAINING (HIIT) EXERCISE, INCLUDING CROSSFIT, WILL BE DEAD IN FIVE YEARS, ACCORDING TO WALTER THOMPSON, AUTHOR OF THE AMERICAN COLLEGE OF SPORTS MEDICINE'S (ACSM) WORLDWIDE SURVEY OF FITNESS TRENDS FOR 2015. FIRST OFF, I FIND IT STRANGE THAT THE BIGGEST FITNESS TREND OF 2014, CROSSFIT, DOESN'T EVEN MAKE THE LIST FOR 2015! WHAT IS ALSO INTERESTING IS THAT CROSSFIT HAS NOW BEEN LUMPED INTO THE BROADER CATEGORY OF HIIT. FOR THOSE IN THE KNOW, CROSSFIT IS FAR MORE THAN MERELY A FORM OF HIIT. CROSSFIT, ACCORDING TO ITS DEFINITION FROM FOUNDER AND CEO, GREG GLASSMAN, IS MULTI-FACETED, AND IS AN ALL-ENCOMPASSING FORM OF EXERCISE.

qualified, and are often even more in touch with current fitness trends and developments. There are many weight lifting, gymnastics, sport-specific, and endurance training seminars or certifications hosted by the experts in their respective fields, and the most successful CrossFit coaches continue to educate themselves to grow their business and improve their success rates with clients.

**TREND #4: Strength training** – Another integral part of CrossFit, where significant focus is placed on Olympic weightlifting and power lifting. By increasing strength, by lifting weights or through gymnastics, many other training aspects improve, thereby increasing performance and results.

**TREND #5: Personal training** – Many CrossFit boxes offer personal training to their clients, both on a one-on-one or group basis. This allows them to fine-tune important skills to reduce the risk of injury and enhance movement efficiency.

**TREND #6: Exercise and weight loss** – These results are easily achieved through CrossFit, for all the reasons already mentioned.

**TREND #7: Fitness programmes for older adults** – Older people can, and do, participate in CrossFit. The exercises, being functional in nature, are easily scalable for older clients, which helps to increase mobility and strength to boost quality of life.

**TREND #8: Functional fitness** – Many, if not most, of the exercises used in CrossFit are functional movements.

**Clearly, just about every exercise trend mentioned in the 2015 ACSM survey is included in CrossFit. Therefore, to say CrossFit doesn't make the list makes no sense. If you consider it in this context then CrossFit is the most comprehensive form of exercise currently on offer, and every segment of the population will derive some benefit from doing it. In fact, it is worth noting that CrossFit may well have helped to revive the popularity of a number of these trends, which have all been around of years already. There is nothing new to them, other than the fact that more people are doing them, more often than not to become better CrossFitters. For these reasons I am convinced that CrossFit is here to stay.** ■

**TREND #9: Group personal training** – The box environment is the epitome of group training environments.

**TREND #10: Outdoor activities** – Whether it is a WOD or comp performed outside, or getting out of the gym to try new sports and activities, you'll often find CrossFitters outdoors.

**TREND #11: Circuit training** – WODs, in general, are structured in a circuit-like fashion.

**TREND #12: Core training** – Core strength is the basic building block of CrossFit. All CrossFit movements, as is the case with functional exercise, rely on the initiation of the movement at the core, which then extends outwards towards the limbs.

**TREND #13: Sport-specific training** – Many athletes, from amateur to Olympic level, now use CrossFit as part of their conditioning programmes.

**TREND #14: Exercise programmes for the treatment/prevention of childhood obesity** – CrossFit Kids focuses largely on children from the age of three, up to teenagers. This gets them active, which is a key element in fighting obesity.

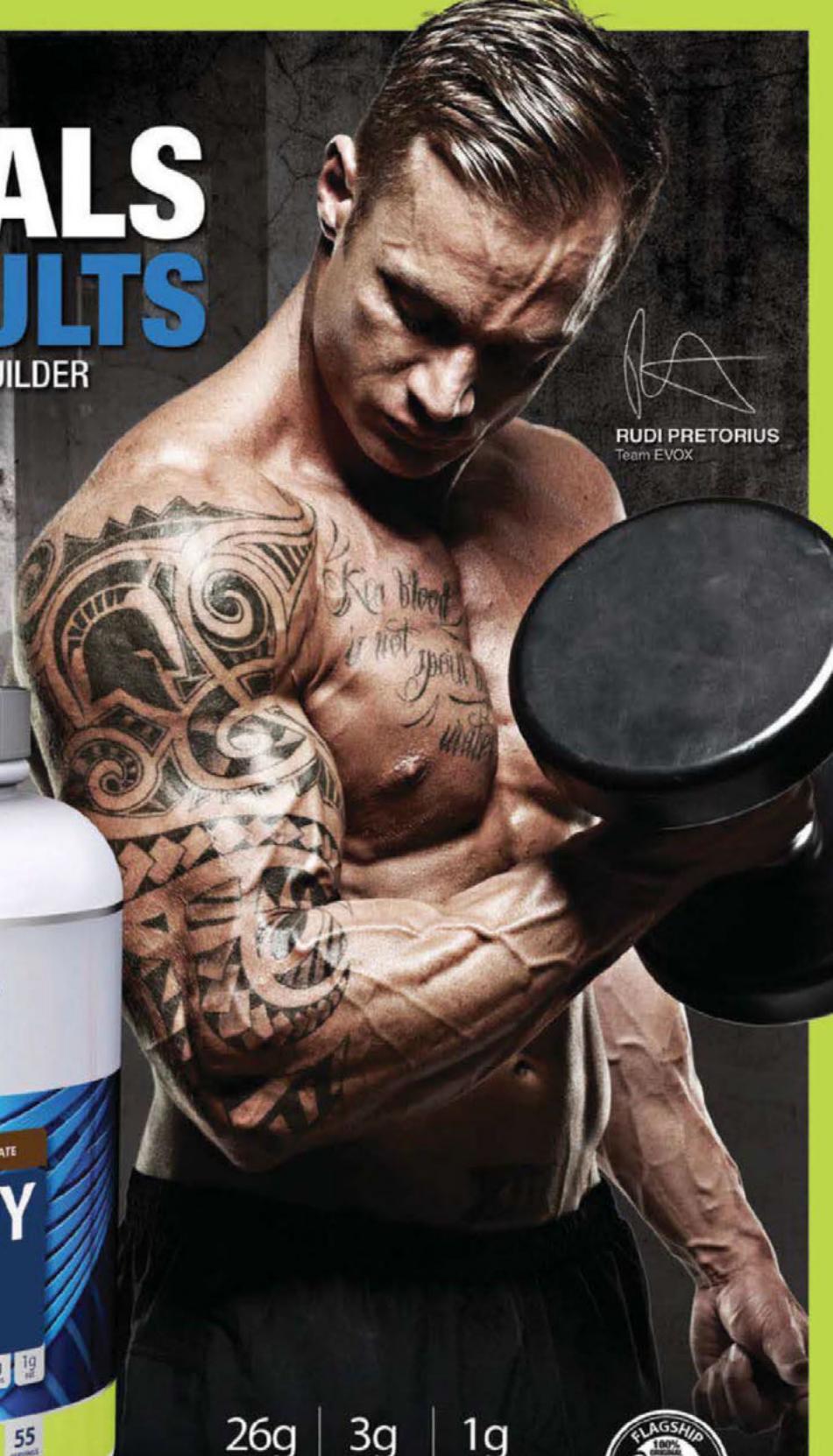
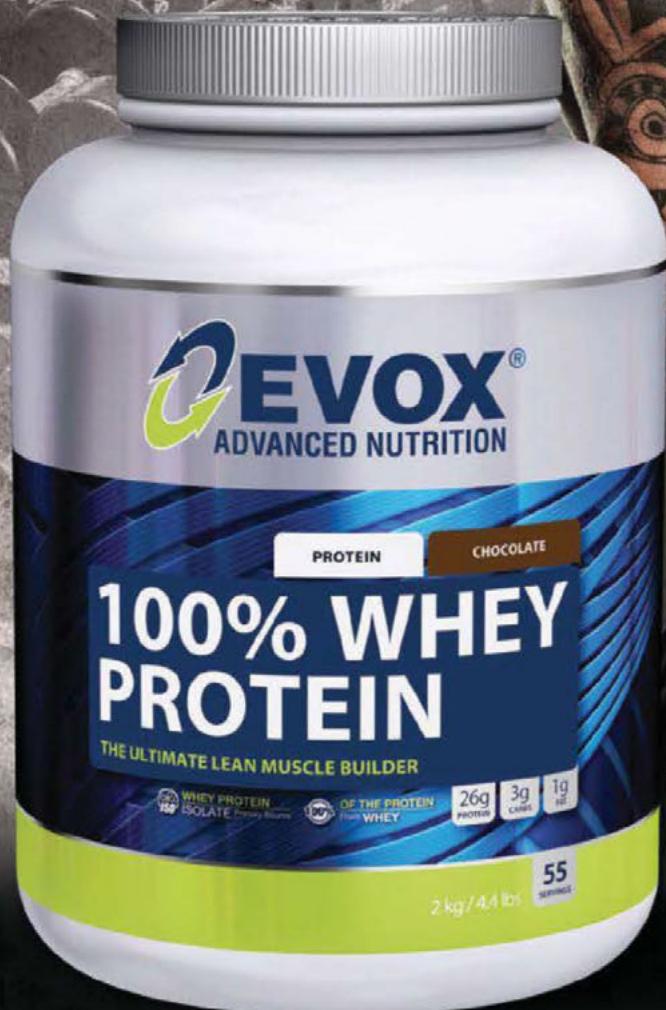
**TREND #15: Outcome measurements** – The definition of CrossFit clearly covers the measurability of exercises and routines executed in the training programme; "increased work capacity across broad time and modal domains. Capacity is the ability to do real work, which is measurable using the basic terms of physics (force, distance and time)."

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**I**t seems like a simple question: should one train and stick to a hardcore, pre-arranged schedule, or should one train as hard as you feel like, when you feel like it? In addition, what is the best tool to measure fatigue, and when do we know we're starting to overtrain?

There may be many views on this, but what does exercise science tell us about it? Prof Mike Lambert is in a better position than most to provide some of the answers to this question.

Lambert has some very interesting info on the effectiveness of 'touchy-feely' training versus training to a pre-arranged schedule. Anyone who trains hard knows about overtraining; that inflection point beyond which everything you do is counterproductive. In layman's terms, it's 'one step forward, two steps back'. However, anyone who trains hard also knows it is sometimes very difficult to tell the difference between chronic fatigue and overtraining. How much exercise is enough? How much is too much?

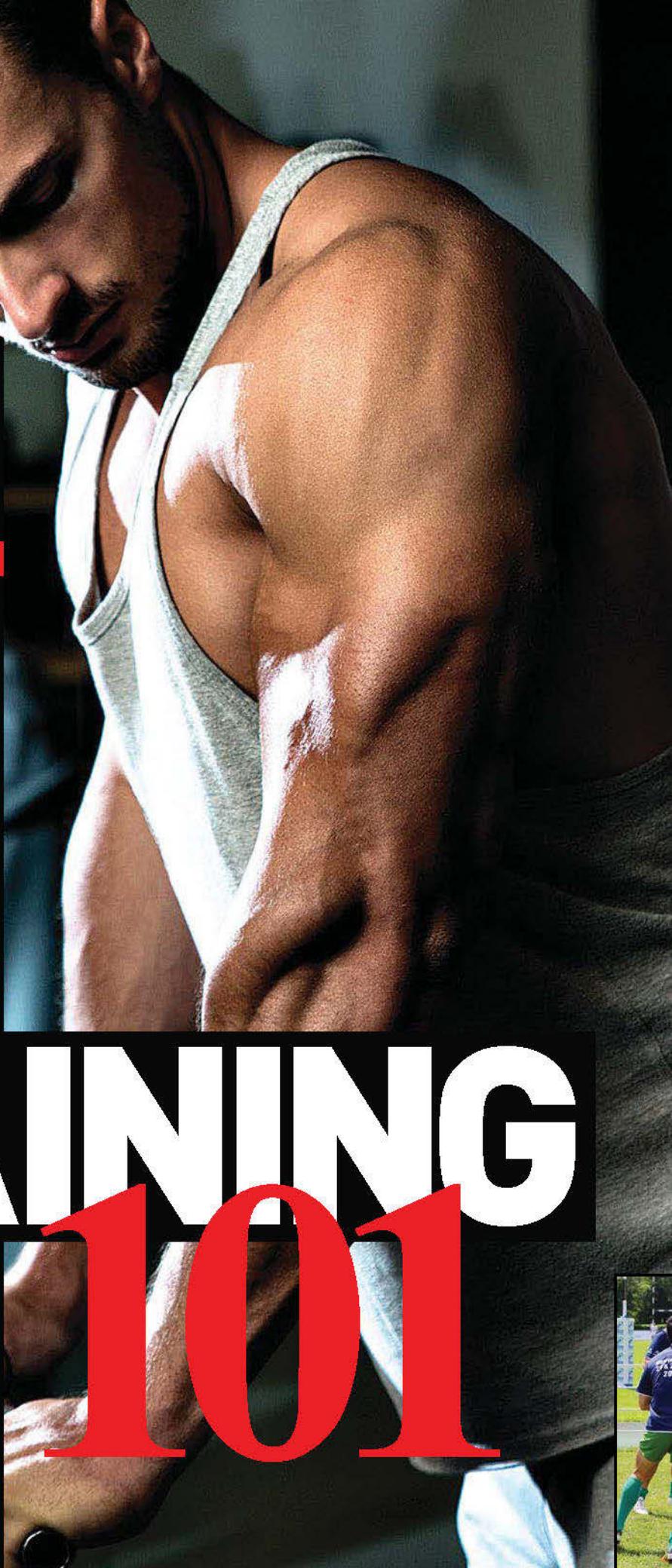
"The important factor in high performance training is how to manage fatigue, and that's really directed our research since the mid-1990s. We got the message from professional high performance teams; they say they needed instructions on how to manage fatigue," stated Prof Lambert at the 2013 Discovery Vitality Summit.

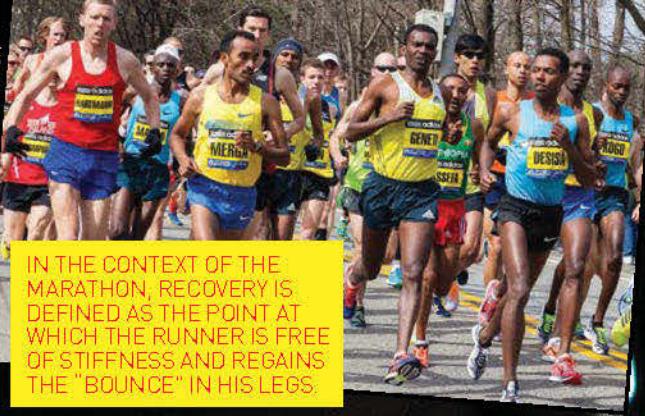
He cites poor competition results as one symptom of latent fatigue. "This is often misinterpreted by the athletes and the coach, and the response is to 'train harder' because one is seen as not performing well. And that perpetuates the cycle."

# TRAINING 101

HOW TO TRAIN WITH PURPOSE, AND GET EFFECTIVE RESULTS, FAST!

► Words and Images by Nick van der Leek





**IN THE CONTEXT OF THE MARATHON, RECOVERY IS DEFINED AS THE POINT AT WHICH THE RUNNER IS FREE OF STIFFNESS AND REGAINS THE "BOUNCE" IN HIS LEGS.**

## TRAINING ZONES

**Prof Lambert refers to 'the anchor' slide of his presentation at the summit, which is the starting point in interrogating training effectiveness.**

On the one side of the continuum is the 'zone of optimum training', and as one moves to the right along the curve (with training volume on the horizontal axis, and results on the vertical) we quickly move to the next zone, which is diminishing returns. Beyond that is the zone of overtraining. The tricky part is this: physical performance peaks on the boundary of diminishing returns/overtraining.

For professional, and high performance athletes this zone or boundary is all about knowing (and predicting) exactly how much training is too much, or too little. Train too much and you underperform, train too little and you underperform. So where is the sweet spot? How

*"If you work with high performance athletes you have to be very familiar with the symptoms of overtraining," says Prof Lambert, who lists them as follows:*

1. Emotional instability
2. Susceptibility to colds and allergies
3. Exercise intolerance
4. Chronic fatigue
5. Sore muscles
6. Increased risk of overuse injuries
7. Inability to tolerate previous training loads
8. Insomnia
9. Loss of motor coordination
10. Personality changes

much training is 'just right'?

Prof Lambert says exercise intolerance is "probably the most crucial diagnostic feature." In other words, for the same energy inputs, one finds not only diminishing returns, but these are even more diminished than they ordinarily would be. This tends to be past the intangible inflection point, where any additional exercise is experienced by the body as overload.

In terms of a loss of motor coordination, Prof Lambert says symptoms are a lot more subtle. For example, where skills are important, a rugby player might drop the ball more frequently, or make bad decisions more frequently.

## FIGHTING FATIGUE

**Prof Lambert says there are clinical factors which "compound" on the conventional symptoms of fatigue.**

These include malabsorption [of nutrients], susceptibility to a variety of infections that a healthy person would not ordinarily be susceptible to, endocrine (hormonal) disorders, psychiatric disorders (depression) and, in extreme cases, parasites (worms, Bilharzia etc).

Prof Lambert highlights the working definition of fatigue in high performance athletes as the point when an athlete is no longer training or competing at his/her best as a result of an imbalance between training load and recovery.

"If you are going to be training at a high level, you are going to be on the verge of overtraining, and you are going to become fatigued. But, if properly managed, you are going to be training effectively and performing at a peak."

*"Physical performance peaks on the boundary of diminishing returns/overtraining."*



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## [TRAINING]

"JUST AS WE HAVE THE SPECIFICITY OF TRAINING, WE ALSO NEED TO CONSIDER THE SPECIFICITY OF RECOVERY."

During a single bout of exercise, what happens? Our homeostasis is pushed out of its normal ranges. The symptoms of disturbed homeostasis include increased heart rate, changes in blood lactate, an elevated body temperature, increased oxygen consumption, changes in cognitive function, changes in creatine kinase and muscle glycogen levels, and shifts in neuromuscular coordination, as well as muscle soreness, muscle function, and changes in the rate of muscle regeneration.

Prof Lambert uses an example of running down a steep downhill during a bout of exercise. "Your creatine kinase levels are going to be high; the stabilisers will be overused so there will be a lot of muscle soreness, and a need for a lot of muscle regeneration."

Whatever you do in terms of exercise, it is going to affect your recovery, but the timeframes are also going to vary. Heart rate and blood values can return to normal within minutes, whereas cognitive

function and creatine kinase levels can take hours to stabilise, and muscle glycogen, muscle soreness and muscle function can take days to recover. Meanwhile, neuromuscular coordination can take weeks, and muscle regeneration months.

"Just as we have the specificity of training," says professor Lambert, "we also need to consider the specificity of recovery. In the rugby context, recovery is defined as the point at which the player can train without constraints of sore muscles or increased risk of injury."

Lambert says rugby players basically have to perform at their best every seven days in a season. However, the schema is entirely different with a marathon runner, for example. In this context recovery is defined as "the point at which the runner is free of stiffness and has recovered the 'bounce' in the legs".

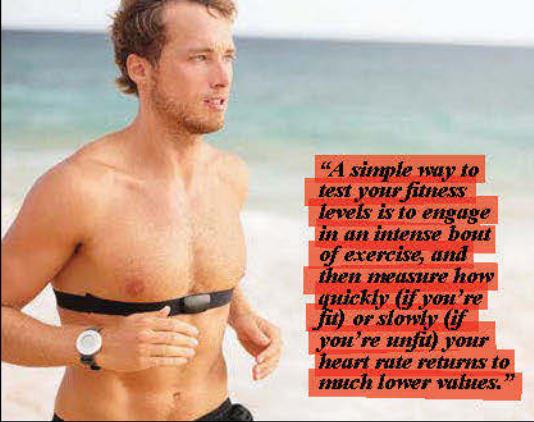
"Muscle regeneration," says Lambert, "can take up to 12 weeks. So if you're a high level marathon runner, it won't be appropriate to try to perform well [more than once] within that 12 week period. You can certainly train, but you should remember your muscles are still undergoing repair."

## HEART RATE VARIABILITY

**W**hile Lambert emphasises the need for the accurate measurement and recording of workout intensity, he also cites some fascinating research into heart rate variability (HRV) as an indicator of optimum training and performance. "The future [in terms of researching performance breakthroughs] is probably going to lie in heart rate variability," he says.

"We've put most of our effort [in terms of research] into heart rate recovery after exercise. Heart rate recovery after exercise is regulated by the autonomic nervous systems." In other words,

it's an automatic process governed by the body. "There's an interplay between sympathetic activation and parasympathetic withdrawal." The sympathetic nervous system increases heart rate in response to a given stimulus, and the parasympathetic nervous system seeks to lower the heart rate to (or near to) resting heart rate afterwards. The body is engineered to do whatever it does in the most economically viable way, and this includes energy balancing. Of course, all living things are also geared to survive and adapt, and thus the sympathetic systems



*"A simple way to test your fitness levels is to engage in an intense bout of exercise, and then measure how quickly (if you're fit) or slowly (if you're unfit) your heart rate returns to much lower values."*

The bottom line then is two-fold. Firstly, heart rate recovery is a powerful and accurate way to monitor fatigue, and to predict changes in performance. Secondly, as one ventures into experimenting with

heart rate recovery, one becomes aware of how differently the body reacts to structured versus flexible training.

So, which one is more preferable then? A study by Capostagno, a PH.D student testing well-trained cyclists, showed poorer results for prescribed training compared to the more 'touchy-feely' instinctive method. "The other [flexible] group did exactly the same training. They would come in in the morning and, based on their readiness to train, they would do the high intensity session [20 minute intervals at peak power]. These were very exhausting tests, with a two minute rest in between. They did four of those sessions."

*So, which group showed the most improvement? "If we look at the flexible group, four of the seven improved. If we look at the structured group, only one out of the eight improved, and one actually got worse." Prof Lambert summarises the take-outs of the trial as follows:*

1. It shows the variability in response.
2. If you're careful about fatigue and readiness to train you get a more predictable outcome.



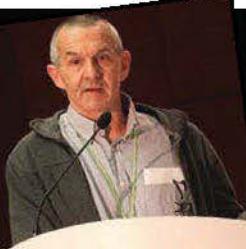
## THE WAY FORWARD

**P**redictable outcomes mean less uncertainty, and less uncertainty means more effective training. Professor Lambert says, following the publication of this study in 2013, they had a large amount of international interest. In terms of high performance, Lambert reckons this is the way forward. ■

Prof Lambert's research interests cover:

- How muscle adapts after exposure to exercise training, with particular emphasis on muscle damage, regeneration and recovery.
- How these adaptations can be applied to improve sports performance.
- Monitoring response to a training load.
- Changing demands of the game of rugby.

Prof Lambert is a CRI-rated research scientist and is involved in the Research Unit for Exercise Science and Sports Medicine (ESSM), Department of Human Biology at the University of Cape Town. He serves as an advisory board member of the International Journal of Sports Science and Coaching. Prof Lambert is also the Editor-in-Chief of the South African Journal of Sports Medicine.





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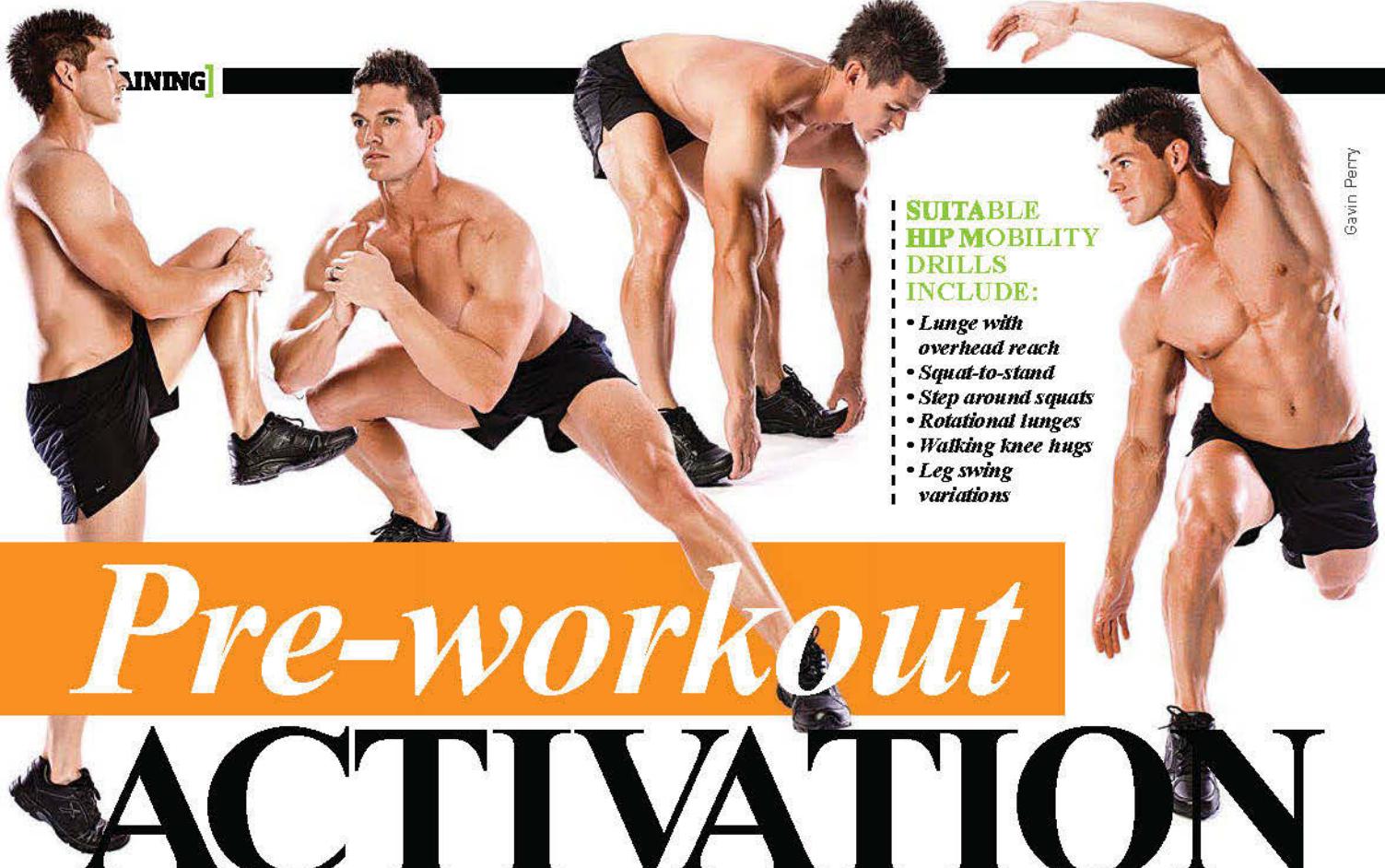
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Gavin Perry

# Pre-workout ACTIVATION

## PRIMING YOUR BODY FOR OPTIMAL PERFORMANCE

By Pedro van Gaalen, Editor | Photographs by Cindy Ellis

**W**arm-ups. We all know we should do them, but few of us ever do.

Sadly, even those who follow the basic guidelines of engaging in some light cardio and a few stretches are missing the mark when it comes to the role of an adequate pre-workout warm-up, particularly when we want to perform at our best.

While there's no denying the fact that some light cardiovascular activity before a session or race raises the temperature of working muscles, and increases the diameter of blood vessels as available blood volume is shunted to the extremities in preparation for the pending physical effort, and that a few stretches can loosen up stiff muscles and joints to enhance movement efficiency, a proper warm-up should do more.

### NEUROMUSCULAR WAKE-UP CALL

A proper warm-up should prime our bodies for the impending physical exertion. It should give all the muscles that we're about to engage a 'wake up call', and prime our neuromuscular system to fire optimally, which ensures each muscle performs to its full potential right from the start. That's where pre-workout activation comes in.

In the broader context, pre-workout activation focuses on neuromuscular activation – performing exercises or drills to 'turn on' the right muscles so that they fire optimally, when you need them to. A comprehensive pre-workout activation routine should therefore consist of a collection of general mobility drills, in addition to specific movement preparation drills, and dynamic stretches that are designed to enhance the communication between your nervous system and your muscles.

And the use of dynamic stretches are important in this regard, as it has been shown that static hold stretches activate a protective neuromuscular reflex that temporarily reduces maximal force production capacity. To illustrate the benefit of dynamic stretches, a 2005 study, published in the Journal of Strength & Conditioning Research, looked at the "effects

#### SUITABLE HIP MOBILITY DRILLS INCLUDE:

- Lunge with overhead reach
- Squat-to-stand
- Step around squats
- Rotational lunges
- Walking knee hugs
- Leg swing variations

of static stretching for 30 seconds and dynamic stretching on leg extension power." The researchers found that there was "no significant difference" between leg extension power among participants who performed static stretching and those who did no stretching at all. However, they did find that "leg extension power after dynamic stretching was significantly greater than that after non-stretching." Based on the results researchers concluded that "static stretching for 30 seconds neither improves nor reduces muscular performance and that dynamic stretching enhances muscular performance."

In addition, as the drills are specific to the activity you're about to perform, it is important to select the right type of pre-activation exercise. However, as most forms of exercise require running or similar biomechanical movement patterns, your hips and the surrounding muscles are generally always involved. As such, glute and hip flexor activation drills are very common, and a great addition to any workout, as are hip mobility drills [review our Jan/Feb 2013 issue,

"A COMPREHENSIVE PRE-WORKOUT ACTIVATION ROUTINE SHOULD CONSIST OF A COLLECTION OF GENERAL MOBILITY DRILLS, IN ADDITION TO SPECIFIC MOVEMENT PREPARATION DRILLS, AND DYNAMIC STRETCHES."

**"From available research, it is clear that the PAP technique delivers better results in athletes who engage in power-based activities."**

available on Zinio, iTunes or Magzter, for a complete guide to mobility drills).

Specific movement drills should target the neuromuscular system by activating specific muscles and movement patterns. As an example, ideal warm-up drills before any sport that involves running could include high knees, heel-to-glute kicks, walking lunges with arm swings, and front-to-back and side-to-side leg swings. These specific movement drills will increase neuromuscular activation, preparing the muscles to fire in the way they'll be required to during the pending race or workout.

## PAP FOR PERFORMANCE

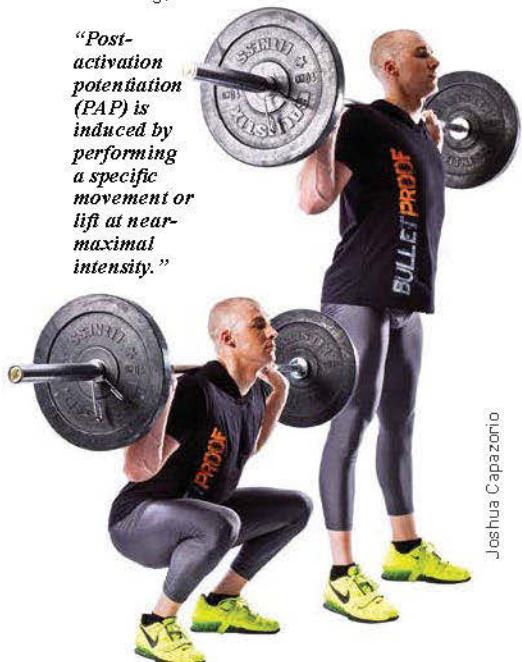
**A**nd, as a growing body of research is showing, a specific form of pre-workout activation that includes heavy compounds lifts can also help to boost performance during subsequent exercises or short duration, intense activities.

A technique known as post-activation potentiation (PAP) has been used by power sport coaches for a number of years, but has been receiving some extra attention from the sports science community in recent years.

A number of studies were published in 2014 in the Journal of Strength & Conditioning Research, which looked at the effectiveness of various PAP techniques, and the application of this technique in a variety of sports, from sprinting and cycling, to weight lifting and jump performance.

The mechanism whereby PAP drills increase performance is attributed to the potentiation effect of voluntary conditioning contractions – high-intensity muscle contractions that help to develop greater power in subsequent contractions. This effect is similar to PNF stretching, where an initial stretch reflex

**"Post-activation potentiation (PAP) is induced by performing a specific movement or lift at near-maximal intensity."**



Joshua Caparozzo

activates receptors, enabling a deeper stretch directly after the initial one. In the case of PAP drills, the force exerted by a muscle is increased due to its previous contraction, provided the initial contraction does not fatigue the muscle/s involved in the subsequent movement or activity beyond a certain point.

This form of neuromuscular activation is induced by performing a specific movement or lift at near-maximal intensity. The nervous system responds by producing an increase in contractile function due to the heavy load conditioning stimulus, which increases both peak force and the rate of force development during subsequent contractions or activity.

Once a lift or drill is performed, the athlete will need to recover sufficiently to ensure there is no residual fatigue. However, once fatigue has dissipated the nervous system will remain primed to activate a more intense muscle contraction for a specific period of time, the duration and intensity of which is dependant on a number of factors.

From available research, it is clear that the PAP technique delivers better results in athletes who engage in power-based activities, and have a greater proportion of type-II muscle fibres. For instance, a study conducted on junior elite rugby league players in 2014, which was published in the Journal of Strength & Conditioning Research, found that the stronger group (i.e. those with more type-II muscle fibres) "exhibited a significantly higher PAP response than the weaker group". This stronger group also displayed the greater level of potentiation sooner, and the effect lasted longer than the weaker group.

However, it seems that there is some possible benefit to endurance athletes who wish to include PAP techniques as part of their performance-boosting warm-up. Another study published in the Journal of Strength & Conditioning Research, this time in September 2014, looked at how acute prior heavy strength exercise bouts improved the 20km time trial performance in cyclists. The research team, headed by Renato Silva, used a protocol of a five repetition maximum (5RM) strength exercise to try to improve the subsequent cycling performance of 11 trained cyclists during a 20km time trial. The participants performed the 20km time trial in controlled conditions 10 minutes after completing four sets of the 5RM strength exercise bout. The results showed "a 6.1% reduction in the time to complete the TT20km, a greater cycling economy, and power output in the first 10% of the TT20km in the potentiation condition. However, no differences were observed in pacing strategy, physiological parameters, and RPE between the conditions." The researchers therefore concluded that "5RM strength exercise bouts improve the performance in a subsequent TT20km."



Robin von Mayer

**"Keep your pre-workout activation routine to about 10 minutes, and ensure you complete it 3-10 minutes before your high-intensity training session or race to ensure no residual fatigue remains."**

## PRE-WORKOUT ACTIVATION GUIDELINES

**F**aced with this evidence it is clear that warm-ups are a key component to deliver optimal performance. If you're an endurance athlete, a combination of light cardiovascular activity, accompanied by a few mobility drills, some dynamic stretching, and specific movement drills that activate the neuromuscular system and movement chains that will be required during the session is the ideal approach. Keep your pre-workout activation routine to about 10 minutes, and ensure you complete it 3-10 minutes before your high-intensity training session or race to ensure no residual fatigue remains.

When it comes to short duration activity, whether it is a weight lifting session, sprints or sporting codes where short bursts of acceleration are required, a PAP technique will deliver ideal results. From the available research it seems sub-maximal lifts are best – within the 3-5RM range, or 60-85% of 1RM. A recent meta-analysis, which reviewed 44 PAP-related studies, determined that the ideal rest period to allow sufficient fatigue dissipation to occur after activation lifts was 7-10 minutes. The meta-analysis also found that multiple sets of prior contractions are better than single sets, and that trained athletes derived greater benefit from this technique than untrained athletes.

However, as a squat rack or weights are not always available, it is worth noting that plyometric movements are also commonly used to induce a voluntary conditioning contraction, and can often be just as effective prior to both endurance and power-based activities. ■

[TRAINING]

HOW TO  
STRUCTURE  
YOUR TRAINING  
SESSION TO GET  
RESULTS!

» BY Pedro van Gaalen, Editor  
» PERFORMED BY Dylan Dawson  
» PHOTOGRAPHY BY Steven Butler Photography  
» SHOT ON LOCATION AT Body Conscious, Randburg

# WINNING THE **ARMS** RACE

*There are many ways to structure an arm workout. Some like to combine arms with agonist muscles – a muscle that contracts together with another to move a part of the body, such as chest and triceps, or back and biceps, for example. Others prefer to hit the main arm muscles twice a week, either with a back and triceps, chest and biceps split routine, or they include a day dedicated to arm training to build on the accessory work done during chest and back training days.*

**Whatever approach you choose based on your ultimate goal, careful consideration should be given to the structure of any arm training session. Do you hit your 'bis' first, then your 'tris', or vice versa, or do you follow an antagonist approach?**

# ARM YOURSELF WITH THE KNOWLEDGE TO DEVELOP BIGGER, STRONGER GUNS

## SELECTING YOUR APPROACH

Before you structure any training routine it is important to first establish your goal. Exercise programming, as it is commonly referred to, is developed with this end goal in mind, be it increased strength and/or size, correcting imbalances, or merely restoring function to an injured muscle group.

Either way, there is no 'wrong' approach if the fundamental elements are adhered to. However, there are certain methods that provide better results than others depending on your desired outcome. For the purpose of this article we will focus on arm training for aesthetics, and arm training for increased strength. While the two aren't mutually exclusive, one approach will deliver greater gains in size, while the other will create more significant gains in strength.

## TRAINING FOR SIZE

When it comes to muscle growth (hypertrophy) body builders have perfected the art. One of the key principles they use is time under tension (TUT) – a factor of the load (weight) lifted, and the amount of time spent 'under' the load. This approach requires slower, more focused reps, with a focus on total load (weight x reps).

Extending the duration that muscles are required to work causes a greater degree of muscle tissue breakdown, which is the training stimulus that leads to bigger muscles when this damage is repaired through rest and nutrition.

Based on this premise, a body builder often structures his routine so that all bicep exercises are performed consecutively before he moves on to the tricep exercises, for example. This overloads the targeted muscle, causing the degree of micro-trauma required to initiate a more pronounced anabolic response.

## TRAINING FOR STRENGTH

When it comes to developing arm strength, be it for specific functional reasons, or merely to be able to lift and push more on the big lifts, volume becomes less important. In this case the weight, rep structure and the tempo of lifts are the all-important factors in creating the desired physiological response – increasing the contractile force of the targeted muscle fibres.

In addition, there is a great deal of benefit to training with an antagonist approach. The bicep and tricep muscles naturally work in unison, as an antagonistic pair, but in opposition to each other; when the bicep, the flexor, contracts, the extensor muscle, the tricep, extends and opposes the force of the contraction, and is also responsible for returning the arm to its initial resting position.

The reason why an antagonist programme structure – performing a bicep exercise, followed by a tricep exercise, in this case – is ideal for improving strength is due to the greater motor-unit activation this type of training produces.

Research shows that power generation can be increased when the initial agonist action is preceded immediately by a contraction of the muscle's antagonist. This means a bicep and tricep exercise are performed, one after the other, to complete an agonist-antagonist paired set (APS). Once both exercises have been completed then a rest interval can be taken between each set.

This approach works because the antagonist exercise primes the motor neurons that force the agonist muscle to contract more intensely, resulting in a stronger, more powerful movement. This forceful stretch-shortening cycle is similar to that produced during plyometric training, another great form of exercise to boost strength and power.

The research supporting this way of training, published in 2005 in the Journal of Strength & Conditioning Research, found that alternating agonist and antagonist muscle exercises increased power output by 4.7% over the control group. The research team, led by Daniel Baker from the School of Biomedical and Sports Science, Edith Cowan University, Joondalup, Western Australia, concluded that the results "may affect power training and specific warm-up strategies used in ballistic sports activities, with increased emphasis placed upon the antagonist muscle groups."

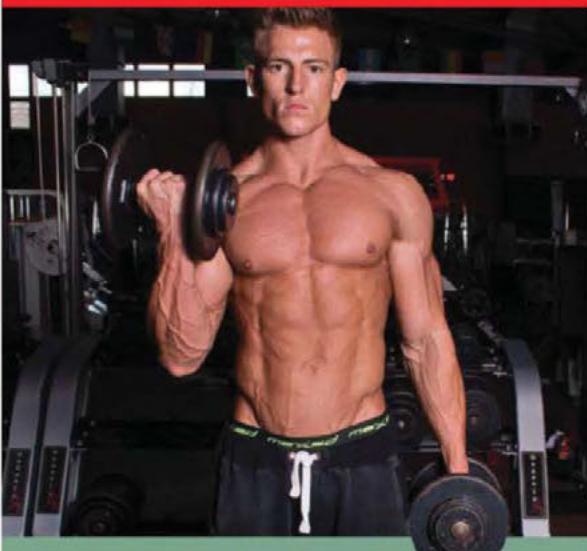
It is also worth considering that increasing maximal arm strength initially will help you lift a greater weight for more reps or time, which increases total load significantly. This will greatly improve muscle size in the long-term, and has a beneficial carry-over into the bigger compound lifts.

## BIGGER, BADDER ARMS WORKOUT

EXERCISE	SETS	REPS
Standing alternating dumbbell curls	4	8 to 12
Standing alternating hammer curls	3	8 to 12
Standing behind-the-head cable curls	4	8 to 12
Concentration curl	3	12
Skull crushers	4	8 to 12
Overhead tricep extensions	4	8 to 12
Tricep rope pushdowns	3	8 to 12
Reverse grip tricep pushdowns	3	12 [each arm]

Rest 60-90 seconds between sets.

## THE MOVES



### STANDING ALTERNATING DUMBBELL CURLS

Stand upright holding dumbbells in either hand, by your sides, with your palms facing in and your arms straight. Raise one dumbbell and rotate the forearm until your palm faces your shoulder. Return to the starting position and repeat with the opposite arm. Continue to alternate between sides.

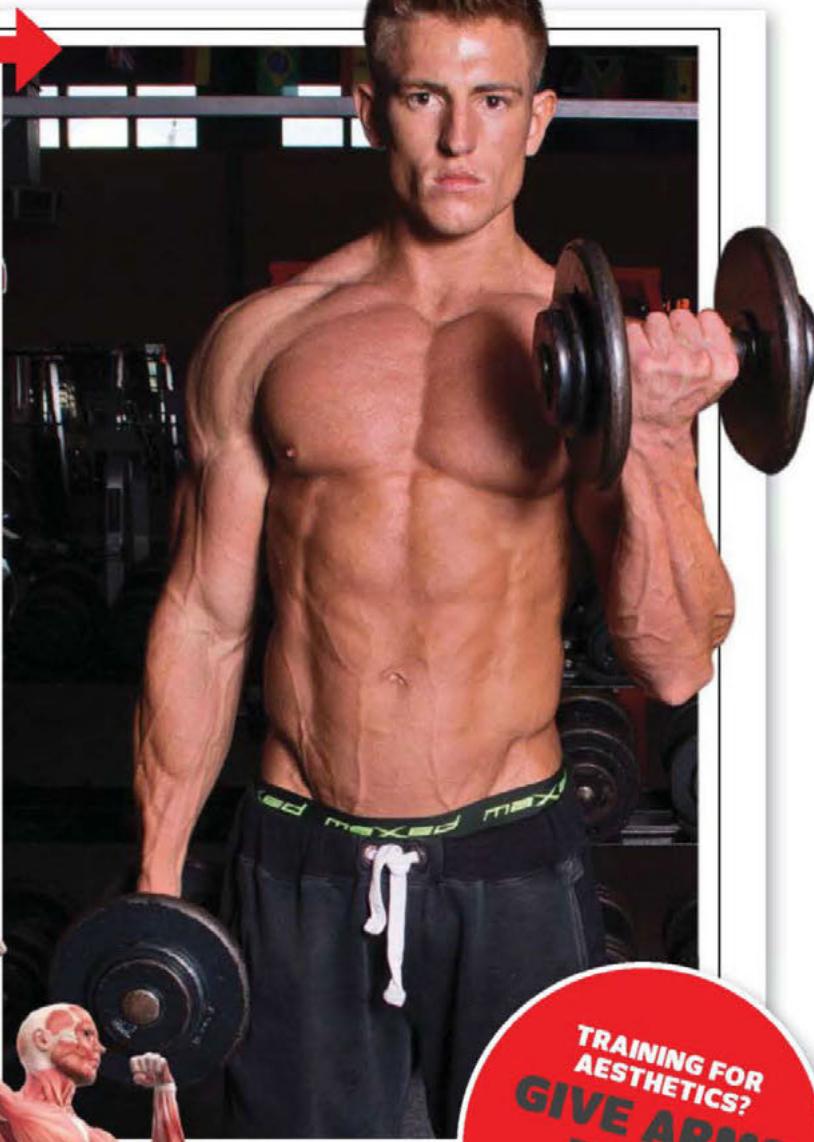
#### MUSCLE ANATOMY

**BICEPS BRACHII:** this muscle has two (bi-) heads  
**FUNCTION:** Bends the arm at the elbow and turns the forearm palm-up.

**LOCATION:** The two points (one for each head) originate on the deep anterior, superior part of the scapula. These points are the glenoid fossa and the coracoid process, and they insert on the anterior surface of the radius below the head.

**TRICEPS:** this muscle has three (tri-) heads

**FUNCTION:** Extends the arm at the elbow.  
**LOCATION:** The medial and lateral heads attach to the posterior surface of the humerus. The long head attaches to the lower border of the scapula, close to the arm socket. All three heads attach to the tricep tendon, which inserts into the base of the ulna on its posterior side. This point is called the olecranon.



## STRONGER ARMS WORKOUT – SUPERSETS

\*perform the first exercise in the list, immediately followed by the second to complete one set.

EXERCISE	SETS	REPS
1. Standing alternating dumbbell curls	4	8 to 12
2. Skull crushers	4	8 to 12
1. Standing alternating hammer curls	4	8 to 12
2. Tricep rope pushdowns	3	8 to 12
1. Standing behind-the-head cable curls	3	8 to 12
2. Overhead tricep extensions	3	8 to 12
1. Concentration curls	3	12 [each arm]
2. Single arm reverse grip tricep pushdowns	3	12 [each arm]

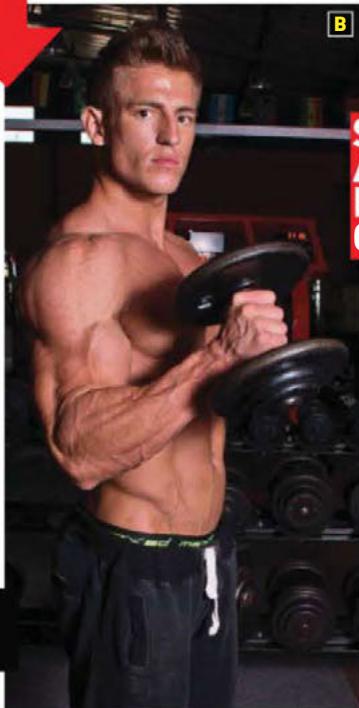
Rest 90 seconds between each superset.

TRAINING FOR AESTHETICS?  
**GIVE ARMS THEIR OWN DAY!**



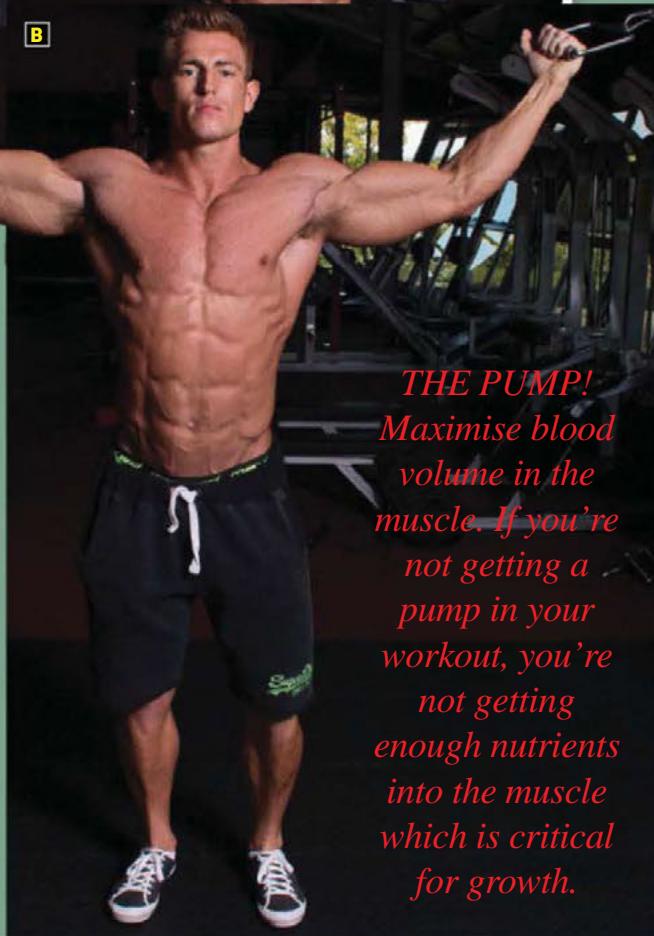
### STANDING ALTERNATING HAMMER CURLS

Stand upright with a slight bend in your knees. Hold dumbbells in either hand, positioned at your sides, with your palms facing in and your arms straight. Keep your elbows at your sides, then raise one dumbbell upward, until your forearm is vertical and your thumb is facing your shoulder. Lower the dumbbell back to the original position and repeat on the other side.



### STANDING BEHIND-THE-HEAD CABLE CURLS

Attach stirrup attachments to each high pulley cable on a cable crossover machine. Stand between the two towers with your feet shoulder-width apart. Grip each handle and extend your arms out to your sides to form a Y-shape, with your palms facing up. Curl your arms toward your shoulders. Laterally rotate your forearms so that your palms are facing your shoulders at the top of the movement. Keep your elbows in place and slowly return to the starting position.



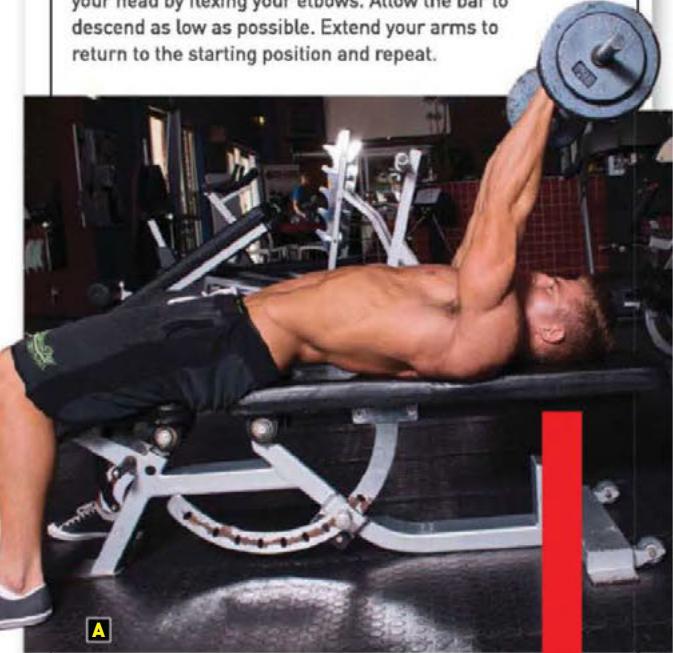
**THE PUMP!**  
*Maximise blood volume in the muscle. If you're not getting a pump in your workout, you're not getting enough nutrients into the muscle which is critical for growth.*

## GET LEANER:

*Your arms will always look bigger, better and more vascular when you're lean!*

### EZ BAR SKULL CRUSHERS

Lie on a bench holding an EZ bar with an overhand grip. Extend it overhead, above your shoulders, by extending your arms. Lower the EZ bar down toward the top of your head by flexing your elbows. Allow the bar to descend as low as possible. Extend your arms to return to the starting position and repeat.



A



B



**FORM TIP:** Position your wrists closer together to keep your elbows from flaring out too much.

### OVERHEAD DUMBBELL EXTENSIONS



Hold a dumbbell overhead with both hands under the inner plate using a diamond-shaped grip. With your elbows overhead, lower your forearms behind your upper arms by flexing your elbows. Flex your wrists at the bottom of the movement to stop the dumbbell from hitting the back of your neck. Raise the dumbbell back up by extending your elbows while hyperextending your wrists.



*Pushdowns are great isolation exercises that bring out the finer details in the triceps.*

## SINGLE ARM REVERSE GRIP TRICEP PUSHDOWNS

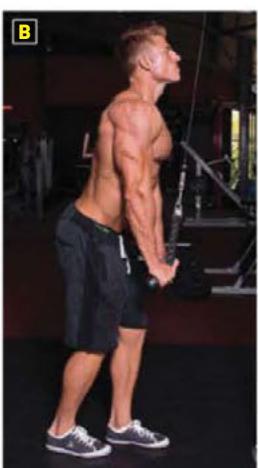
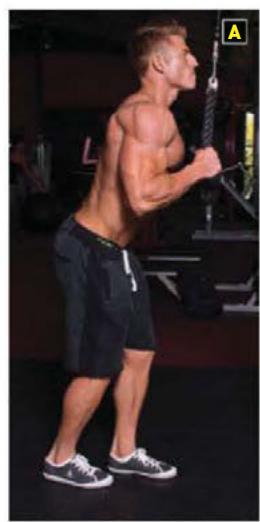
Grasp a single stirrup attachment, attached to the high pulley, with an underhand grip. Position your elbow to the side of your torso. Extend your arm down, then return to the starting position, with your forearm close to your upper arm. Repeat for the required reps before continuing with the opposite arm.



## A PRO'S PERSPECTIVE

IFBB pro bodybuilder and online coach, Andrew Hudson, shares his insights on training arms for aesthetics: "I believe that in training other body parts, such as chest, shoulders and back, your arms get enough maximal strength work. If you try to go for maximal lifts on targeted, isolated arm training days, on top of your normal heavy compound lifting, guys tend to end up with elbow, joint or tendon problems. All the young guys are probably laughing at me about this, but trust me, give it a few years and see for yourself. A few years ago I was the one laughing. The best approach in my mind, which I learnt from the legendary John Meadows, is to go for maximum pump, not maximal weight. Do giant sets, drop sets and supersets; anything to really blow your arms up, and put maximum tension onto your muscles, while not stressing the joints. Exercise order is key here – perform exercises that place the least stress on your joints first to allow everything to warm up before the more strenuous exercises. As far as focusing on biceps first, then tricep, I don't believe in absolutes. What I do believe in is variety and always keeping things fresh. For that reason I might do an all-biceps then triceps session one week, then superset a bicep and a tricep exercise the next. The trick is to constantly change things."

Contact Andrew at  
[bulkhusdoncoaching@gmail.com](mailto:bulkhusdoncoaching@gmail.com).



## ROPE PUSHDOWNS

Face the high pulley and attach a rope attachment. Grasp the ropes with your palms facing one another. Position your elbows by your sides. Extend your arms downwards while pronating your forearms so that your palms are facing backwards at the bottom of the movement. Squeeze your triceps at the bottom of the movement before returning to the starting position by flexing your elbows.

FORM TIP: Your elbows can travel up a few inches at the top of the movement. Stay close to the cable throughout the movement to provide resistance at the top of the motion.

# GET YOUR JAVA JOLT

» By Pedro van Gaalen, Editor

## WHY COFFEE IS THE PERFECT START TO ANY DAY...

**A**s a self-confessed coffee addict I'm quick to justify that second cup, (granted it's normally my second double espresso latte) on the odd occasion, with some health-related tidbit. However, it's not just a feeble attempt at justifying my overindulgence. The right type and kind of coffee, when drunk in moderation, and at the right time, can deliver significant health and performance benefits.

While the benefits of coffee in general, and caffeine in particular, have been debated for decades, the fact remains that this is a naturally occurring substance in nature. Obviously the commercially produced coffee we drink today is often overly processed, with many substances added, such as preservatives, which are proving to be detrimental to our health. Accordingly, the more natural and unprocessed the bean is, the more beneficial it is to your health.

### COFFEE'S ORIGINS

**M**ost available accounts of the origin of coffee point to east Africa, where herders apparently noticed that their goats became more active and energetic after eating berries from coffee trees. Today

these berries are cultivated in many countries around the world, and then harvested, processed and dried to yield the seeds inside. These seeds are then roasted to varying degrees, depending on the desired flavour, before being ground and brewed to create coffee.

The active psychoactive chemical in coffee, caffeine, a stimulant that is widely regarded as the most commonly consumed psychoactive substance in the world, has since been isolated and extracted to create the concentrated form of the compound found in many medicines, supplements and various nutritional products.

When you drink coffee the caffeine is absorbed into the bloodstream, and is then processed by the liver. It then travels to the

brain, where it elicits its effects. Caffeine blocks an inhibitory neurotransmitter called adenosine from binding to adenosine receptors in the brain, which would normally cause drowsiness as more accumulated over the course of a day. In doing so, caffeine increases alertness. In response, levels of other neurotransmitters like adrenalin, norepinephrine and dopamine increase, leading to enhanced firing of neurons. This is why drinkers feel energised, experience an elevated mood, and get that 'buzz'.

However, there are other beneficial compounds in coffee that deliver the touted health-promoting properties.

"THE RIGHT TYPE AND KIND OF COFFEE, WHEN DRUNK IN MODERATION, AND AT THE RIGHT TIME, CAN DELIVER SIGNIFICANT HEALTH AND PERFORMANCE BENEFITS."

# THE HEALTH BENEFITS

Coffee beans contain a number of nutrients, which can make it into your morning cup, depending on the product you use (instant coffee is overly processed and therefore contains fewer nutrients).

A cup of coffee made from natural and/or organic beans contains riboflavin (vitamin B2), pantothenic acid (vitamin B5), niacin (vitamin B3), magnesium, manganese, and potassium, albeit in small doses when compared to RDA requirements.

Coffee is also a rich source of antioxidants. In fact, it has become one of the most important sources of these beneficial compounds in the Westernised diet, according to a study conducted at the University of Scranton (Pa.). Researchers, who presented their findings at the 230th national meeting of the American Chemical Society, the world's largest scientific society, showed that most Americans get more antioxidants from coffee than both fruits and vegetables, combined. "Nothing else comes close," said study leader Joe Vinson, Ph.D., a chemistry professor at the university. And these antioxidants are also reported to be highly bioavailable, which means drinkers are able to absorb more of what's available in their cup of coffee.

Antioxidants have been linked to a number of potential health benefits, including protection against heart disease and cancer. And numerous studies seem to back up these claims, specifically with regard to two types of cancer – liver and colorectal cancer. Studies show that coffee drinkers have up to a 40% lower risk of liver cancer, while another, conducted on 489,706 individuals, found that those who drank 4-5 cups of coffee per day had a 15% lower risk of colorectal cancer.

And the health benefits seem to extend even further than the beneficial effects of antioxidants. While the mechanisms for many of these benefits are unclear, there is sufficient evidence to support claims that coffee can reduce the risk of many modern maladies, and help prevent and treat a number of other lifestyle-related conditions.

Type-2 diabetes, for instance, is one of the most prolific lifestyle diseases in the modern Western world. For some reason, coffee drinkers have a significantly reduced risk of developing type-2 diabetes, with numerous studies showing that people who drink the most coffee have a 23-50% lower risk of developing this disease. In addition, a meta-analysis that looked at data from 18 studies, with a total of 457,922 individuals, found that each daily cup of coffee was associated with a 7% reduction in risk of developing type-2 diabetes.

Coffee consumption has also been linked to improved liver health. Studies have shown

that people who drink four or more cups of coffee per day have up to an 80% lower risk of developing liver cirrhosis, which can be caused by several diseases that affect the liver. An international team of researchers led by Duke-NUS Graduate Medical School also found that coffee can help prevent the development of non-alcoholic fatty liver disease.

These disease-reduction benefits also correlate with increased life expectancy. In fact, several observational studies show that coffee drinkers have a lower risk of death. Two very large studies, including a National Institutes of Health AARP Diet and Health study, found that drinking coffee was associated with

**"Just smelling coffee could make you less stressed."**

## THE BRAIN BENEFITS

Many controlled trials in humans also show that coffee improves various aspects of brain function, including memory, mood, vigilance, energy levels, reaction times and general cognitive function. In fact, just smelling coffee could make you less stressed. Researchers at the Seoul National University examined the brains of rats who were stressed with sleep deprivation and discovered that those that were exposed to coffee aromas experienced changes in brain proteins tied to that stress.

Coffee also seems to delay the onset of a number of prolific neurodegenerative diseases, including Alzheimer's disease, the leading cause of dementia worldwide, and Parkinson's disease. Several studies show that coffee drinkers have up to a 65% lower risk of getting Alzheimer's disease. In one such study, researchers from the University of South Florida and the University of Miami found that people older than 65 who had higher blood levels of caffeine developed Alzheimer's disease 2-4 years later than others with lower caffeine levels.

Parkinson's disease, the second most common neurodegenerative disease, is caused by the reduction of dopamine-generating neurons in the brain. In various studies, coffee drinkers were shown to have a 32-60% lower risk of developing the disease. Additionally, ScienceDaily reported, in an article published in 2012, that drinking coffee may help people with Parkinson's disease control their movement. Ronald Postuma, MD, the study author, said, "this is one of the first studies in humans to show that caffeine can help with movement symptoms for people who already have the disease."

Coffee also appears to lower the risk of developing depression, with a 2011 study conducted by the Harvard School of Public Health determining that drinking 2-4 cups of coffee a day can reduce the risk of suicide in men and women by about 50%.

ANTIOXIDANTS IN COFFEE HAVE BEEN LINKED TO A NUMBER OF POTENTIAL HEALTH BENEFITS, INCLUDING PROTECTION AGAINST HEART DISEASE AND CANCER."

a 20% lower risk of death in men, and a 26% lower risk of death in women, over a period of 18-24 years. In the AARP study, male participants who drank just one cup a day reduced their risk of death by 6%. The group that drank 4-5 cups a day experienced the greatest reduction in risk, at 12%. Similarly, a Japanese study of more than 76,000 participants found that men who consumed 1-2 cups of coffee a day reduced their risk of dying from cardiovascular disease by as much as 38%.

**"COFFEE OFFERS SUCH A BENEFIT, IN FACT, THAT CAFFEINE WAS ONCE LISTED AS A BANNED SUBSTANCE ON THE WORLD ANTI-DOPING AGENCY'S (WADA) LIST."**

## THE PERFORMANCE BENEFITS

**T**op athletes and coaches have known about the performance-enhancing benefits of caffeine, in various forms, for years. It is therefore one of the most heavily studied and researched substances in the history of sports science.

Whether it is a caffeine supplement or a cup of coffee before a training session or a race, caffeine helps to mediate a number of physiological responses that can improve performance. It offers such a benefit, in fact, that caffeine was once listed as a banned substance on the World Anti-Doping Agency's (WADA) list.

At the most basic level of performance enhancement – energy production and efficiency – caffeine helps to increase metabolism, by up to 11%, according to various studies. It also boosts the efficiency with which your body burns stored fat for energy, which delivers more calories per gram than any other macronutrient. The free fatty acids available for energy production in the bloodstream also help to spare our body's less abundant fuel source, glycogen, for use later on during an intense session or race.

This was corroborated in a study conducted by John Ivy, Ph.D. and his colleagues, titled "Influence of caffeine and carbohydrate feedings on endurance performance". The study, published in the journal Medicine and Science in Sports, tested nine cyclists to determine the effects of caffeine, and glucose polymer feedings, on performance. The researchers found that, during the last 70 minutes of the caffeine trial, "fat oxidation was elevated 31% and appeared to provide the substrate needed for the increased work production during this period of exercise."

Numerous other studies show that caffeine can increase fat metabolism by as much as 10% in obese individuals, and 29% in lean people. This is also a key reason why caffeine is found in many fat burning supplements.

The other way caffeine helps to improve performance is by lowering our perceptions of effort or exertion, as well as pain. A study published in 2005, in the Scandinavian Journal of Medicine & Science in Sports, titled "Effects of caffeine ingestion on rating of perceived exertion during and after exercise", examined the effects of caffeine ingestion on ratings of perceived exertion (RPE).

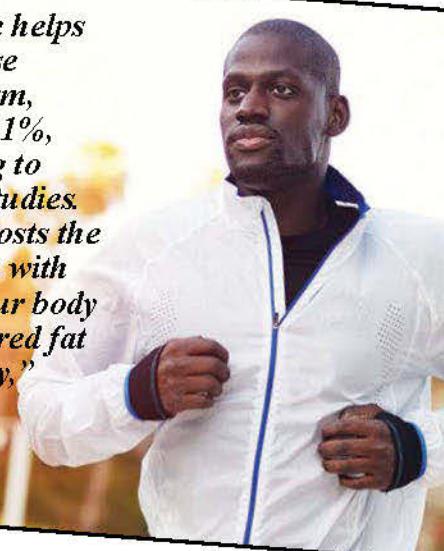
Twenty-one studies were included in the meta-analysis, and researchers concluded that, in comparison to a placebo, caffeine reduced RPE during exercise by 5.6%. In addition, caffeine improved exercise performance by 11.2%. "Regression analysis revealed that RPE obtained during exercise could account for approximately 29%

the variance in the improvement in exercise performance. The results demonstrate that caffeine reduces RPE during exercise and this may partly explain the subsequent ergogenic effects of caffeine on performance", stated researchers.

In a more recent study, published in 2013 in the European Journal of Sport Science, researchers looked at the potential beneficial effects caffeine could have on resistance training. In the study, researchers noted that the "efficacy of caffeine ingestion in enhancing aerobic performance is well established. However, despite suggestions that caffeine may enhance resistance exercise performance, research is equivocal on the effect of acute caffeine ingestion on resistance exercise performance." Their results indicated that "participants completed significantly greater repetitions to failure, irrespective of exercise, in the presence of caffeine" and that "RPE was significantly lower in the caffeine compared to the placebo condition and was significantly higher during lower body exercises compared to upper body exercises irrespective of substance ingested." They therefore concluded that "acute caffeine ingestion not only enhances resistance exercise performance to failure but also reduces perception of exertion and muscle pain."

Caffeine also offers an additional performance benefit worth noting, which was highlighted by Dr Mayur Ranchordas, a senior lecturer and performance nutritionist at Sheffield Hallam University. He carried out studies on footballers using caffeine and carbohydrates combined in a drink. In addition to the improvements in endurance, he also found that the athletes' skill level improved. Ranchordas was quoted as saying; "These findings suggest that, for athletes competing in team sports where endurance and skill are important factors, ingesting a carbohydrate and caffeine drink, as opposed to just a carbohydrate drink, may significantly enhance performance."

*"Caffeine helps to increase metabolism, by up to 11%, according to various studies. It also boosts the efficiency with which your body burns stored fat for energy,"*



## CAFFEINE CONSIDERATIONS

**U**nfortunately this is not good news for everyone. Individual differences in the response to caffeine have also been noted in research, both from a health and performance perspective. This is largely attributed to genetics and the differing rate at which people metabolise caffeine.

**L**iver function and our genetic make-up (how our genes determine how we respond to and interact with nutrients) shapes how quickly and effectively our bodies and systems can process caffeine.

**A slow metaboliser of caffeine, for instance, won't process caffeine effectively and therefore tend to be adversely affected. Symptoms include anxiety, nervousness, jitters, nausea and insomnia. A fast metaboliser is more likely to respond in the manner outlined in this article, but ideal dosages will still vary greatly from one person to the next (the average recommended dose is 5g/kg).**

**A**nd, as is always the case, anything done in excess can cause problems, and caffeine is no different. The hormonal response from caffeine ingestion means that an over-consumption can lead to conditions such as adrenal fatigue. We also build a tolerance to it, which means we will need more over time to deliver the same response.

**T**here is also new research available that shows how caffeine affects immunity. The recent study found that caffeine actually boosts the activation of antigen-stimulated NK-cells, which regulate your innate immunity. While this is beneficial, the same research found that antigen-stimulated T-cells, which form part of our adaptive immune system, decreased when caffeine and exercise were combined. This lowered immune response, and amplified the immune suppression commonly associated with intense and/or voluminous training.

**T**he trick is to test your response to caffeine, in whatever form, as the benefits are numerous, and they're grounded in solid science. Whether you drink coffee for the pleasure, or aim to use it as an ergogenic aid, when used correctly there is no doubting its ability to improve focus and alertness, boost energy, enhance fat metabolism, increase strength and reduce levels of perceived exertion. ■



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# N

umerous studies have shown that an individual can reach peak cardiovascular fitness within three months, with a number of key adaptations occurring within the first six weeks, which can significantly boost your fitness levels.

For example, a study conducted by German researchers, published in the journal Medicine & Science in Sports & Exercise, had 18 sedentary volunteers undergo a year of moderate intensity training. The participants engaged in a walk-jog

programme, exercising three times a week for 45 minutes. The researchers monitored improvements in fitness by measuring maximum oxygen uptake, speed and heart rate, both during exercise and at rest. They found that, even at this level of intensity and volume, the largest gains were seen in the first three months.

After six months, most of the markers that were being monitored had started to plateau.

It is therefore possible to realise even better results in a shorter timeframe, but only when the correct approach to training is adopted.

>> BY Pedro van Gaalen, Editor



# 6 WEEKS to a fitter you!

## UNDERSTANDING THE PROCESS

The role of the cardiovascular system is to deliver energy, in the form of oxygen and other energy substrates such as glycogen, free fatty acids and amino acids, to living tissues. It also fulfills a key role in the removal of metabolites and the other by-products of energy production.

Your cardiovascular system includes your heart, lungs and vascular system, the central nervous system (CNS), and the enzymes and cellular structures necessary for metabolism, most importantly the mitochondria.

When we exercise in the correct manner the body adapts in a number of ways. These adaptations include cardiac hypertrophy – an increase in heart size – with a commensurate increase in contractile force. This increases our stroke volume – the volume of blood our heart pumps out with each beat.

Our respiratory and vascular systems also become more efficient at extracting oxygen from the air we breath, and our ability to carry more of that oxygenated blood to working muscles, where it is required most during exercises for energy production, also increases. This occurs when our body produces more red blood cells, and muscle capillary density increases in

response to training.

Increases in the enzymes and metabolic cellular structures – the mitochondria, which are needed for ATP production – occur within six weeks, according to a 2007 review published in Sports Medicine, by Vernon Coffey and John Hawley of RMIT University in Melbourne, Australia. The authors stated that mitochondrial protein content can be increased by 50–100% with roughly six weeks of endurance training.

## THE RIGHT APPROACH

The most effective forms of training to boost cardiovascular fitness in the shortest time possible should aim to manipulate multiple variables over the course of the programme. These variables include intensity, duration, and frequency of training sessions.

For example, numerous studies have found a correlation with the 80–20, or Pareto principle, in the adaptations to training by elite endurance athletes. The most beneficial gains were seen in those who performed 80% of their training at intensities below their lactate threshold (review our feature on threshold training in our Jan/Feb 2015 issue for more info), and used high-intensity training techniques for the remaining 20% of their training.

The truth is that many of us seldom engage in what can truly be considered intense exercise, yet this is the type of training that delivers the greatest returns. These high-intensity training sessions normally consist of interval-type training, which enables athletes to perform above their aerobic threshold, and as close to max as possible, for short periods of time. It is in this zone – the anaerobic threshold – where very specific adaptations to exercise, on a physiological, anatomical and hormonal level, are initiated, and deliver the exponential returns that boost fitness levels within a few weeks.

There are numerous studies available that

>> Many of us seldom engage in what can truly be considered intense exercise, yet this is the type of training that delivers the greatest returns.

## timeframe when adopting this training approach!

support the use of high intensity interval training (HIIT) as the ideal way to boost your fitness, fast. As an example, a study published in the Journal of Applied Physiology, conducted at the Exercise Metabolism Research Group at McMaster University in Ontario, Canada, by Martin Gibala and his research team, found that a total of 2-3 minutes of sprinting, done in 30-second bursts during a 20-minute workout, three times a week, produced the same results as three endurance cycling sessions per week, each of which lasted 90-120 minutes. Stated more simply, just one hour of interval training produced the same effects on endurance capacity as six hours of steady-state exercise. In addition, after just two weeks, or six workouts, tests indicated that test subjects increased their endurance by 100% on average, and their muscles began using oxygen more efficiently to burn fuels.

### THE BENEFITS

Faced with all this evidence you may be asking, "why do I need to improve my fitness?" Granted, if you don't participate in endurance sport there may be little incentive to add intense cardio exercise to your programme. However, there are a number of benefits to improving your general fitness levels, many of which carry over into everyday life, and your performance in the weights room.

Most importantly, cardio exercise helps to improve the health and efficiency of your cardiovascular and cardiorespiratory systems. This can help to reduce the likelihood of common diseases that affect these systems, such as cardiovascular disease. In fact, the American College of Sports Medicine states that higher levels of cardiovascular fitness are associated with a 50% reduction in cardiovascular disease risk. Regular, intense cardiovascular exercise will also help you increase your insulin sensitivity and glucose metabolism, which can reduce your chances for developing type-2 diabetes, provided your diet is correct.

Intense cardio is also a great way to boost your metabolism and burn more calories, which assists with weight and fat loss, or weight management.

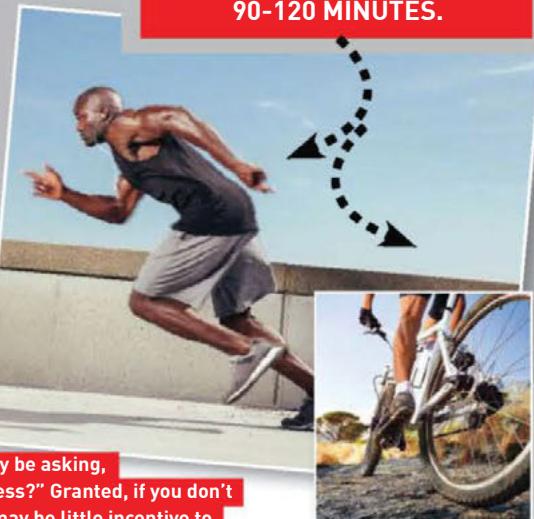
There is also a significant hormonal response to intense cardio training, including an increase in testosterone and human growth hormone production when sprinting is incorporated into your routine. Cardio also helps to release more 'feel good' hormones, called endorphins.

The combination of these factors give you more energy and vitality, and it's not uncommon to find that those who engage in some form of cardiovascular exercise programme report improved sleep quality too, which aids recovery.

This all helps to improve performance in the gym, as well as out on the road, as your body becomes a much more efficient 'machine'. You'll also find that your endurance improves, which could translate into an extra few reps at the end of every set, which helps to boost muscle growth, albeit indirectly.

### SPRINTING VS CYCLING

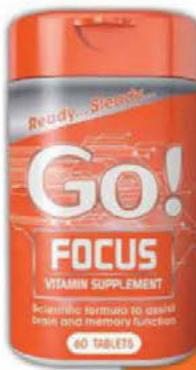
2-3 MINUTES OF SPRINTING, DONE IN 30-SECOND BURSTS DURING A 20-MINUTE WORKOUT, THREE TIMES A WEEK IS EQUAL TO THREE ENDURANCE CYCLING SESSIONS PER WEEK OF 90-120 MINUTES.



"HIGHER LEVELS OF CARDIOVASCULAR FITNESS ARE ASSOCIATED WITH A 50% REDUCTION IN CARDIO-VASCULAR DISEASE RISK."

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# THE RIGHT TOOLS FOR THE JOB

**W**ith so much to gain it pays to know what form of cardio training will deliver the results you're after. This includes selecting the best types of equipment in the gym if you are not out on the road or track, to get the most out of your HIIT cardio sessions.



## TREADMILL

Treadmills allow you to walk or run, with the ability to control your speed and incline to vary the intensity. As all aspects of the workout can be controlled by the user, you can be precise with your pacing and the intensity and duration of your intervals.



## ROWER

This machine works the entire body at once, which means your heart is required to pump blood and oxygen to the two largest muscle groups, namely your legs and back, at the same time. This makes it a great exercise to improve multiple fitness variables, including peripheral blood flow and blood shunting.



## CROSS-TRAINER/ELLIPTICAL STEPPER

Steppers or stair climbers simulate climbing a never-ending flight of stairs. The degree to which you activate big lower leg muscle groups makes it an ideal option to elevate your heart rate, with variable speed and step depth options, which makes it ideal for structured interval sessions.

## STATIONARY BICYCLE

A stationary bike simulates the cycling motion, without actually moving. This makes it safer and it is a relatively comfortable form of cardio once you've become accustomed to sitting on the saddle. The variable resistance options make it easy to boost the intensity using either cadence or resistance. However, as it is a low impact, non-weight bearing form of exercise it requires a greater amount of time to elicit the same adaptive response to say running or rowing.

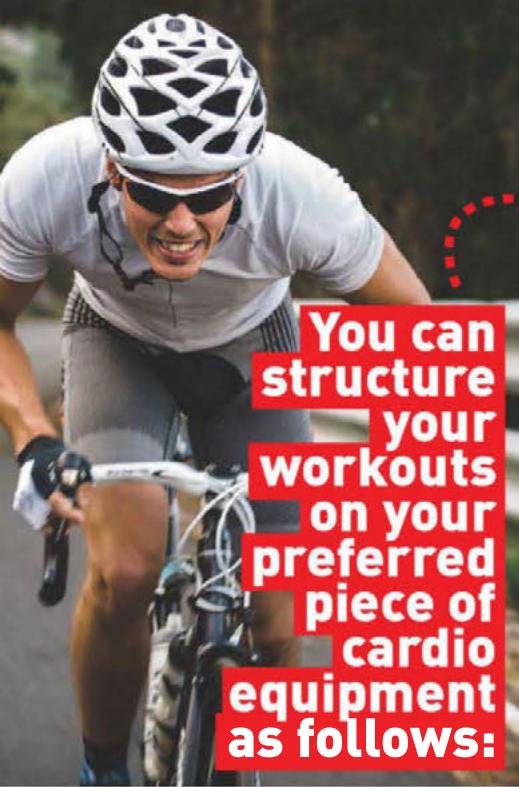


## SPINNING BIKE

A spinning bike has a weighted flywheel, which simulates the effects of inertia and momentum when riding a real bicycle (to a certain extent). This makes it more effective than a traditional stationary bike as the resistance and intensity can be altered to a greater degree. The design of a spinning bike allows riders to adopt various seated and standing positions, which also makes it more practical.



**Improve performance in the gym, as well as out on the road, as your body becomes a much more efficient machine.**



You can structure your workouts on your preferred piece of cardio equipment as follows:

### 1. INTERVALS

After a warm-up of two minutes, alternate your intensity between bursts of high intensity and bursts of low-to-moderate intensity active recovery intervals, for a total of 20 minutes. When you start out, your high intensity intervals can be shorter. You can then start to work your way up to equal duration intervals, and then progress to longer high intensity intervals, with shorter recovery intervals.

#### SAMPLE INTERVAL WORKOUT

INTERVAL NUMBER	INTERVAL TYPE	INTERVAL DURATION	INTERVAL INTENSITY
1	High	30 sec	85% of MHR
2	Recovery	90 sec	65% of MHR
3	High	30 sec	85% of MHR
4	Recovery	90 sec	65% of MHR
5	High	30 sec	85% of MHR
6	Recovery	90 sec	65% of MHR
7	High	30 sec	85% of MHR
8	Recovery	90 sec	65% of MHR
9	High	30 sec	85% of MHR
10	Recovery	90 sec	65% of MHR
TOTAL		20 min	

Cool down for at least two minutes after your session at 50% of your MHR.

### 2. FARTLEK TRAINING

Swedish for 'speed play', Fartlek refers to an unstructured interval session where you constantly vary your intensity by alternating between slow, moderate and faster efforts for varying time periods.

#### SAMPLE FARTLEK WORKOUT

INTERVAL NUMBER	INTERVAL TYPE	INTERVAL DURATION	INTERVAL INTENSITY
1	High	45 sec	85% of MHR
2	Low	90 sec	50% of MHR
3	Moderate	60 sec	65% of MHR
4	High	60 sec	80% of MHR
5	Moderate	90 sec	70% of MHR
6	High	90 sec	85% of MHR
7	Low	120 sec	50% of MHR
8	Moderate	75 sec	65% of MHR
9	High	90 sec	85% of MHR
10	Moderate	120 sec	70% of MHR
11	High	120 sec	80% of MHR
12	Low	90 sec	55% of MHR
13	High	30 sec	90% of MHR
14	Moderate	120 sec	65% of MHR
TOTAL		20 min	

### 3. INCREMENTAL RISE TO MAXIMUM

This is a maximal workout that should only be used by fit individuals. Start at a low speed and resistance [a fast walk is ideal]. Select a suitable time interval and increase your speed and/or resistance (only one variable though) after that time has elapsed. Continue until you are unable to carry on. This is a great way to boost your VO<sub>2</sub>max, a key indicator of athletic potential.

#### SAMPLE INCREMENTAL RISE TO MAXIMUM WORKOUT

INTERVAL NUMBER	INTERVAL DURATION	INTERVAL INTENSITY
1	60 sec	55%
2	60 sec	60%
3	60 sec	65%
4	60 sec	70%
5	60 sec	75%
6	60 sec	80%
7	60 sec	85%
8	60 sec	90%
9	60 sec	95%
10	60 sec	100%
TOTAL		20 min



## THE RIGHT TOOLS FOR THE JOB

### OTHER SUITABLE CARDIO TRAINING OPTIONS INCLUDE:



#### THE ROAD

The conditions you experience out on the road are hard to replicate in a controlled environment. The topography of the surrounding area means there may be regular changes in elevation, while environmental conditions such as heat, humidity and wind also increase workload, or impact performance. Whether you're riding or running outdoors, it is often the most suitable place to train due to the varied challenges an athlete will face. However, due to constantly varied terrain it can be difficult to perform structured interval training. Short bursts on flat or inclined sections are ideal to boost the intensity of a training session.



#### THE TRACK

The track serves up the same environmental challenges as training out on the road, but the flat nature and exact distances that have been measured and marked allow athletes to perform more structured interval sessions. Common intervals used on the track include 400m, 800m, 1000m and 1200m sprint repeats.

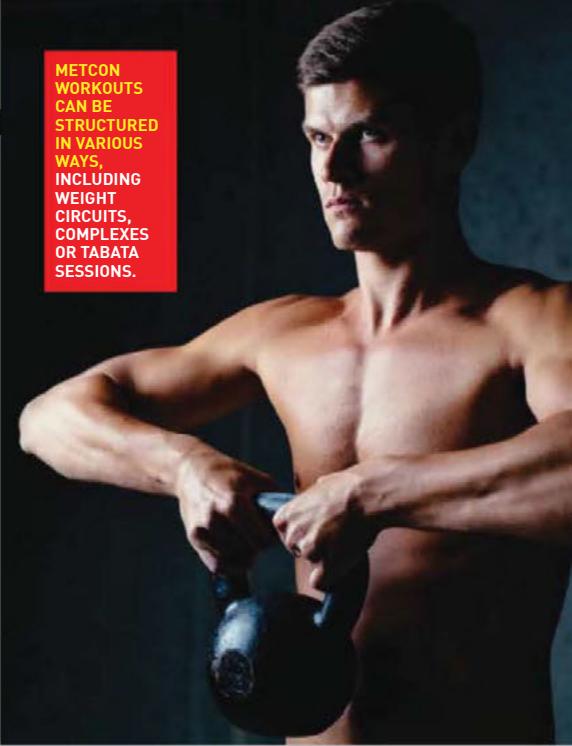
#### CROSSFIT

In essence, CrossFit is another form of metcon training. The high intensity nature of WODs are proving to be one of the best ways to improve fitness, while also increasing strength and endurance. For example, the US Army conducted a forensic study of 14 military personnel who underwent CrossFit training in May 2010. They found that a six-week CrossFit programme increased the athletes' physical fitness by an average of 20%, with one athlete experiencing a 41% increase.

Another study, which was published in the Journal of Strength & Conditioning Research, in November 2013, showed that CrossFit-based high-intensity power training (HIPT) improved maximal aerobic fitness, as well as body composition. Participants [23 men and 20 women] followed a 10 week CrossFit-based HIPT programme. V02max and body composition were measured before and after the programme, and "improvements were significant", according to researchers. The team, led by Michael Smith, concluded that "HIPT significantly improves V02max and body composition in subjects of both genders across all levels of fitness."



METCON WORKOUTS CAN BE STRUCTURED IN VARIOUS WAYS, INCLUDING WEIGHT CIRCUITS, COMPLEXES OR TABATA SESSIONS.



#### METCON WEIGHT TRAINING

Various forms of metcon weight training have already been covered in this magazine, but they're worth mentioning again in this context, as they're great ways to improve cardiovascular fitness too.

Metcons are an advanced form of training where an athlete executes complex compound and functional exercises with little or no rest between sets or intervals. By engaging larger muscle groups, in addition to a number of accessory muscles in every exercise, athletes are able to target multiple energy systems, and improve various aspects of their cardiovascular system. Metcon workouts can be structured in various ways, including weight circuits, complexes or Tabata sessions.

To illustrate the effectiveness of resistance exercise as a form of cardiovascular training, Canadian researchers at Queen's University pitted a Tabata protocol metabolic conditioning workout against treadmill running, to see which workout would deliver better results. In the study, published in the journal Applied Physiology Nutrition and Metabolism, in 2012, participants either did 30 minutes of treadmill running at 85% max heart rate, four times a week, for four weeks, or eight rounds of 20 seconds of a single exercise (burpees, jumping jacks, mountain climbers or squat thrusts) with 10 seconds of rest between rounds – for a total workout time of four minutes (the control group did no exercise). After four weeks both groups had increased their aerobic fitness levels by 7-8%, but the metcon group had done so with less total exercise time. In addition, researchers concluded that: "These data demonstrate that although improvements in cardiovascular fitness are induced by both endurance and extremely low volume interval-style training, whole-body aerobic-resistance training imparted additional benefit in the form of improved skeletal muscle endurance." ■

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**Fill in the shortfall in your diet with these healthy food choices**

By Melanie Heyns, Features Writer

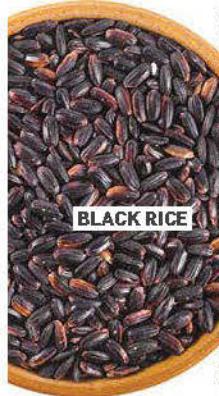
# BOOST YOUR NUTRITION

In today's age of mass food production and convenience food it's highly likely that our diets are deficient in many of the important vitamins and minerals that our bodies need to function optimally.

However, making sure that our diets meet even our minimum daily requirements, without the use of supplements, can be challenging. To ensure you get as many essential nutrients as possible from the food you eat, here are a few of the more nutrient-dense food choices to consider the next time you go shopping. If you pay attention you may notice that certain foods appear more than once in this list...

## VITAMIN E

When people start following a healthy diet, more often than not they end up cutting out a lot of foods that are rich in fats, many of which are also rich in vitamin E. For instance, vitamin E is found in nuts, seeds and oils. It's another important antioxidant, and it also protects skin against sun damage. Rich, natural food sources of vitamin E include:



BLACK RICE



TOMATOES

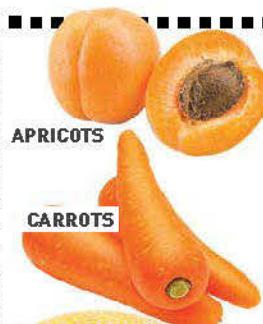


SWEET POTATOES

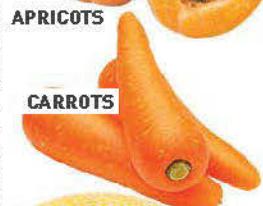


PINE NUTS

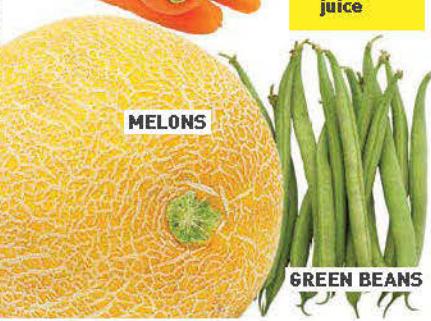
- Wheat germ oil
- Leafy greens
- Almonds
- Avocado
- Sunflower seeds
- Grape seed extract



APRICOTS



CARROTS



MELONS

- Leafy greens
- Liver
- Lentils
- Avocados
- Egg yolks
- Spinach
- Broccoli
- Orange juice

GREEN BEANS

## FOLIC ACID

Folic acid is the synthetic form of the B vitamin folate. Folic acid helps our bodies break down, use and create new proteins. It also helps with the formation of red blood cells, and the creation of new DNA. It pairs up with vitamin B12 as a coenzyme to aid the metabolism of the amino acids homocysteine and methionine. Rich, natural food sources of folic acid are listed above.



PAPAYA: One cup contains 88mg

GUAVA: half a cup contains 188mg and only 56 calories

## VITAMIN C

Many people only associate vitamin C with its ability to strengthen our immune systems. However, it's also an important substance needed for the production of collagen. Vitamin C is also an antioxidant, which protects our cells from the damage caused by free radicals. In general, men should consume about 90 milligrams of vitamin C a day. Rich, natural sources of vitamin C include:



SWEET RED PEPPERS: half a cup contains 142mg and only 20 calories



KIWI FRUIT: One small kiwi contains 70mg

CHILLI PEPPERS: Half a cup of chopped or diced chili peppers contains 108mg



KALE: One cup delivers 80mg



CAULIFLOWER: A small head delivers 128mg



STRAWBERRIES: Half a cup contains 49mg



ORANGES: One medium sized orange contains 70mg



GRAPEFRUIT: Half a cup contains 39mg

- Pineapple
- Mango
- Brussels Sprouts
- Broccoli
- Cabbage
- Cantaloupe
- Lemon



GREEN PEPPERS:

Half a cup contains 60mg

## POTASSIUM

Potassium plays a key role in maintaining optimal muscle and nerve function, as well as fluid balance. It also promotes the formation of strong bones, and is essential for energy production. It's recommended that men aged 19 and older get at least 4,700 milligrams of potassium every day. Rich, natural food sources of potassium include:

- White beans
- Spinach
- Sweet potato
- Orange juice
- Broccoli
- Cantaloupe

YOGHURT

- Beef liver
- Chicken

FISH

CHICKPEAS

## VITAMIN B6

Vitamin B6 plays an important role in converting food into energy as it helps our bodies metabolise fats and proteins. It's also important for healthy hair, skin, liver and eyes. Vitamin B6 is also needed for proper brain development and function, and plays an essential role in the production process of hormones such as serotonin and norepinephrine. Natural food sources of vitamin B6 are listed above.

## MAGNESIUM

Our bodies use magnesium in more than 300 biochemical reactions, including muscle and nerve function, the maintenance of bone strength, and the regulation of healthy heart rhythm. Natural food sources of magnesium include:

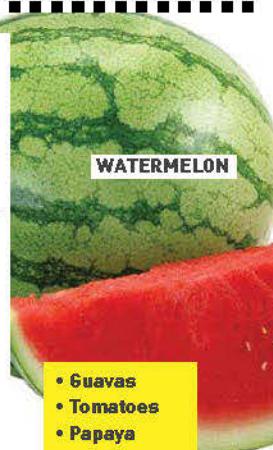
BANANAS

- Dark leafy greens
- Nuts and seeds
- Soybeans

AVOCADO

## LYCOPENE

Lycopene is a chemical pigment found in red fruits and vegetables. Some studies suggest that lycopene may help guard against a range of ailments such as heart disease and several different types of cancer. Natural food sources of lycopene include:



- Guavas
- Tomatoes
- Papaya
- Grape fruit
- Red peppers



MUSHROOMS

ONIONS

- Brazil nuts
- Sunflower seeds
- Shellfish
- Grains

## SELENIUM

Although our bodies only require a small amount of selenium, it does play a large role in preventing chronic diseases, in addition to regulating thyroid function, and strengthening our immune systems. Get your daily dose from the foods listed above.

Improving the nutrient quality (and quantity) of your diet should always be the first step on the road to optimal health. Once you have your diet right you can then turn to supplements to make up the difference and meet your individual nutritional needs.



Eggs

- Leafy greens
- Beef
- Beans
- Turkey
- Chicken



SHELLFISH

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\*Efficacy of support may vary between users

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PHOTO BY CHERIE VALE / NEWSPORT MEDIA



OAKPICTURES

ACCORDING TO TEAM UNLIMITED CEO, TOM KIELY, Xterra derives its name from 'X', a numerical term which denotes an "UNKNOWN", and terra, which is Latin for land or territory. The combination was therefore combined to mean "UNKNOWN TERRITORY", which captures the spirit of adventure inherent in this sporting code.

# OFF-ROAD TRIATHLON

AS WITH MOST ENDURANCE SPORTING CODES THAT BORDER ON THE EXTREME, OFF-ROAD TRIATHLON CAN ALSO TRACE ITS ROOTS BACK TO HAWAII.



PHOTO BY CHERIE VALE / NEWSPORT MEDIA

## Origins

Stemming from the endurance 'boom' era of the late 1980s and early 1990s, when ESPN was looking to licence endurance event properties to televise, Team Unlimited, the sporting code's founder and rights owner, came up with the concept of an off-road triathlon in 1996.

The first event ever held was used as a publicity opportunity for a new hotel on the south shore of Maui. This inaugural event, which was originally

going to be called Aquaterra, would combine a sea swim with a mountain bike leg and a trail run.

The event was broadcast nationwide in the US, and sparked the birth of a new sport that would take the world by storm. Following on from the success of that event, which would go on to become the annual Xterra World Championships, the sport's best-known and most popular series was born.



OAKPICTURES

## Exponential growth

One event became four in 1997, with a fifth added in 1998. In 1999 the series attracted a big-name sponsor in the form of Nissan, who used the naming rights to help market a vehicle they developed that also carried the Xterra name. This gave Team Unlimited the financial support to roll out a 10-stop Xterra America Tour, which drew a great deal of international coverage.

Demand for events soon followed, which saw massive expansion in Europe, Canada and Japan in 2000. In 2001 a points system was implemented to determine a series winner, with a total 19 races taking place in the US in the lead up to the US Championship.

Today there are more than 300 Xterra off-road triathlon and trail running races held in 25 countries around the world each year, with a dedicated US, and a World Tour series. And, of course, with this kind of success, a number of competitor events have been launched that follow a similar format.

This growth continues, seemingly unabated, as a thirst for adventure attracts more athletes to

the trails and mountains outside of built up, busy urban areas. The fact that an off-road triathlon also requires a higher degree of technical skill makes it more appealing than the all-out sustained effort of conventional road-based triathlons.

With constantly changing scenery, and shorter race distances (which doesn't necessarily mean less effort is required), off-road triathlons, and specifically Xterra, have also attracted a larger number of competitors to the sport. Triathlon's global governing body, the International Triathlon Union (ITU), attributes this to a rise in the popularity of the sport in general.

In fact, the ITU even launched its own series, dubbed cross triathlon, in 2007, which has grown to include various continental championship events. The inaugural ITU Cross Tri World Championships were held in 2011 in Extremadura, Spain, with South African Xterra legend, Conrad "the Caveman" Stoltz taking the inaugural title. The 2015 event will take place in Sardinia, in Italy, this September. ■

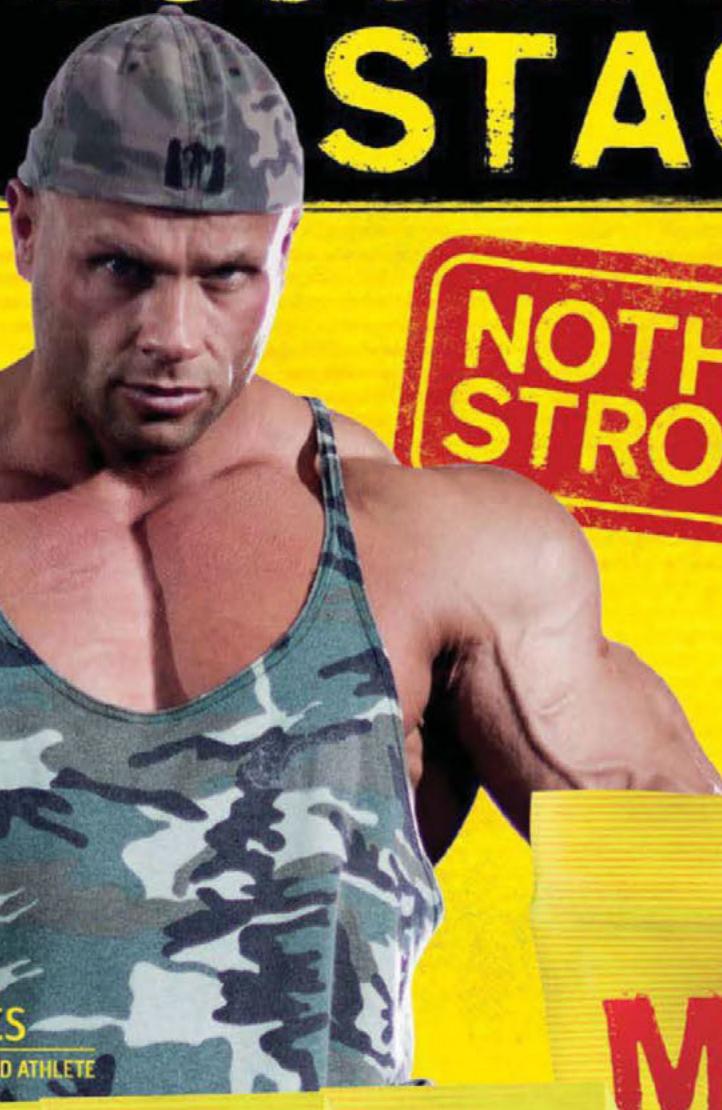
*For more information on the US and World Xterra tours visit [www.xterraplanet.com](http://www.xterraplanet.com), or [www.stillwatersports.com](http://www.stillwatersports.com) for local event details.*



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**I**N A COUNTRY WITH SUCH ABUNDANT TALENT IT IS DIFFICULT TO BREAK THROUGH AND MAKE A NAME FOR YOURSELF AS A PROFESSIONAL ATHLETE, ESPECIALLY IN THE LESS MAINSTREAM SPORTS. This is most evident in the world of multi-sport and triathlon, where a few big names such as Richard Murray, Conrad Scholtz and James Cunnamra tend to dominate the headlines.

Yet, while these athletes get the fair share of the limelight, there exists a depth of talent in this country that is truly astonishing. One such athlete is Xterra champ and multi-sport legend Stuart Marais. To call him the unsung hero of South African multi-sport would be a disservice to his immense talent, but he certainly hasn't always received the coverage he so richly deserves.



» Photos by Cherie Vale/Newsport Media

# STUART MARAIS

## Xterra champ turns his focus to Ironman 70.3, and more...

*Here's 10 questions with the self-styled Xterra dark horse, turned Ironman 70.3 hard man, Stuart Marais...*

**1 You made the transition from Xterra legend to road triathlon contender, and multiple 70.3 winner last year. Tell us about the change in training and why you chose to shift your focus.**

I have always enjoyed crossing sports and cross training to gain overall fitness, and Xterra lends itself to that. I switched over to Xterra as the fast rhythm suits my style of racing. Ironman 70.3 requires a similar type of training with regard to hours, but requires slightly more speed work from a run perspective, which I enjoy. The transition played towards my strengths – a fast run at the end of a longer bike.

**2 You're another strong multi-sporter who has strong running roots. Is this the secret to being a strong triathlete, on or off road?**

Ultimately a triathlon is won on the run. As the saying goes, 'bike for show, run for dough'. This doesn't mean you can't lose a triathlon on the swim and bike, but it is won on the run. And, yes, this suits me perfectly.

**3 In your opinion, will the stronger runners always dominate the sport?**

No, the stronger runner won't always win. The most preserved runner will win.

**4 What then, in your opinion, makes a successful triathlete?**

I believe a strong emphasis should be placed on improving bike strength, which enables you to run well after a hard bike leg. So, ultimately, the most conditioned athlete will keep winning. If you can't run after a hard bike you don't have a chance.

**5 What is it that makes you such a good endurance athlete? Is it a big VO2max, or massive lactate threshold?**

I don't know all my numbers, neither do I believe that knowing them will change anything. I work

really hard at what I do, and I believe I have what it takes to win.

**6 What are your top tips for running, riding and swimming faster?**

Work, work, work! There are no shortcuts to improvement. Join groups and learn from more experienced athletes.

**7 What are your long-term plans in terms of racing? When will Stuart Marais become an Ironman champion?**

My focus over the next two years will be solely on 70.3 racing. After that I will progress to the longer full Ironman distance. The 2016-2017 season is when you'll see me jump up a notch. Older and slower = longer and harder.

**8 What does it take to go from a 70.3 race winner to full Ironman contender?**

Conditioning, lots of hard work, and a strong mindset. Triathlon is very selfish and requires a ton of sacrifices. My family is very important to me, and spending time with them is non-negotiable. Ironman might steal that time, so I'll wait till my boys are older.

**9 What has been the greatest moment in your career to date and why?**

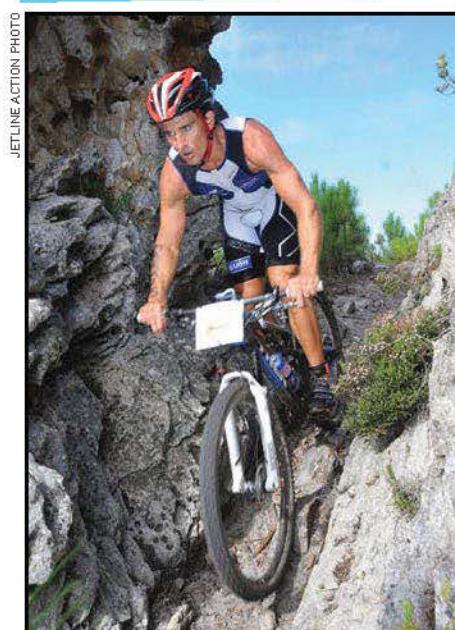
Winning Ironman Italy 70.3. It was a breakthrough race and year for me. I also have so many highlights and different results, all of which have played a role in me chasing and following my dreams.

**10 What is your favourite multi-sport event and why?**

I love racing Xterra. I've raced so many events around the world, in both Xterra and 70.3 – from Italy, New Zealand and Taiwan, to Luxembourg and Germany. It is difficult to pick a favourite, but SA certainly has some spectacular venues. ■



**"The stronger runner won't always win. The most preserved runner will win."**



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» By Pedro van Gaalen, Editor  
» Photography by Volume-Photography

**TOTALSPORTS**

# X TERRA

If you were in any doubt as to the popularity of multisport in South Africa then the weekend of 24 and 25 January 2015 would have set the record straight as two of the country's most popular events took place, both with sold-out fields.

Down in East London the biggest event on the triathlon calendar was taking place, as the Standard Bank Ironman 70.3 (half Ironman) took

to the water and the streets of Buffalo City. With all 3,000 entries selling out it promised to be a massive event, with over 2,200 triathletes taking to the water on the day.

At the same time one of the biggest events on the local off-road triathlon calendar was taking place in North West Province, as 1,200 competitors lined-up over the weekend to take on the Totalsports Xterra, presented by Rehidrat® Sport events.

## GLOBAL PHENOMENON

**Xterra is a global phenomenon that has experienced exponential growth since its launch in 1996 (it was known as the Aquaterra originally). In 2014 more than 300 Xterra off-road triathlon and trail running races were held in 25 countries around the world, culminating with the Xterra World Championships, held in Maui, Hawaii, the birthplace of the sport.**

In South Africa, which boasts some of the highest participation and growth statistics in the world, there are three annual events. This includes the annual Totalsports Xterra South African Championships, held

every February in Grabouw, in the Western Cape, which is the biggest Xterra event globally, as well as the Xterra Knysna event, which forms part of the annual Oyster Festival, and the Buffelspoort event, which kicks off the local season at Buffelspoort Dam each January.

Off-road triathlon follows the same principles as the more common 'on-road' version of the sport, which includes three stages, namely a swim, bike and run leg, in that order. The difference is that the latter two legs are done off-road, in the form of a mountain bike ride and a trail run. The distances of

the races also vary from the standard triathlon distances as the terrain covered is more technical and demanding. This offers a new dynamic, and has been drawing a great deal of interest from the local triathlon and multisport communities, as well as mountain bikers and trail runners.

In fact, all local events now also offer a standalone trail run event, with a variety of distances available to attract an even broader market to the weekend's activities. At the 2015 Buffelspoort event, just under 600 participants took to the trails around Buffelspoort Dam in one of the Puma Trail Run events.

## TOP TIPS:

Whether you're there to compete, or you're simply looking for a new challenge, the Xterra experience offers the ideal challenge for everyone. If you decide to try it out here are a few tips from first-hand experience:

- A good swim sets you up for a good race, so don't neglect this in your training.
- A little upper body gym work will help with the rigours of mountain biking after a hard swim.
- Prepare your transition area properly before the race starts, and practise your gear changes a few times before the event.
- Use transition to top up on energy food and drink as the bike leg doesn't offer many opportunities to take your hands off the handlebars.
- Some spray sunblock application before the run is advisable as the swim and bike ride may have removed a lot of it.





## THE EXPERIENCE

**Due to the remoteness of the rugged locations selected for these events, in relation to major centres, in this instance Johannesburg and Pretoria, the racing starts a little later in the morning than most other endurance sports. This gives everyone enough time to get to the venue, register, get their equipment into the transition area, and make their way to the start line at the water's edge. However, as was the case in 2015, it does give the temperature an opportunity to rise before the action gets going.**

Thankfully for the Full event participants, organisers have chosen to spread the events over a weekend in recent years. Due to the continued growth in popularity of the events, the Lite and Full events are now held over two days, instead of running concurrently on one day, as was previously the case. This ensures that, despite the later start, competitors aren't racing through the midday heat.

The Xterra Full event now happens on the Saturday, which consists of a 1.5km swim, 27km mountain bike ride and a 12km trail run. With previous Xterra champion Stuart Marais racing at the Ironman 70.3, and four-time World Champion, Conrad Scholtz, taking a wrong turn on the run leg, Bradley Weiss claimed a long overdue, but well-deserved victory in the men's race, in a combined time of 2h35m31s.

With the dust settled from the previous day's Xterra Full action, the biggest field of the weekend – just under 800 multisport athletes – gathered at the water's edge to take on the Xterra Lite event.

The event is the ideal introduction to the sport as it features a short 400m swim, a

17km mountain bike and a 6km trail run. All competitors in each event get a full race briefing before the swim leg, which outlines key safety points ahead of the race. This is particularly important for Lite athletes, as many are first-time participants. Swim caps are compulsory, but due to the summer temperatures and the short distance wetsuits aren't required in the Lite event.

Due to the sheer number of competitors the transition area can still be quite congested, even with the two races now split, so knowing where your gear is, and practising your transition from swim to biking gear, and from biking to trail running kit, is essential.

Over the years the organisers have also tweaked the swim, bike and run courses at the Buffelspoort event, ensuring very few bottlenecks occur. The most noticeable changes in this regard are the single track sections in the bike course, which only start after a few kilometres now. This ensures everyone can settle into a good rhythm on the bike before tackling the more technical terrain, which is plentiful in the mountains around Buffelspoort.

While it is relatively short, the mountain bike leg on the Lite is still quite challenging, with enough technical terrain to keep it interesting. There isn't too much climbing on the bike course either, at around 280m of total ascent. However, the trail run certainly makes up for it, with 100m in the first 4km.

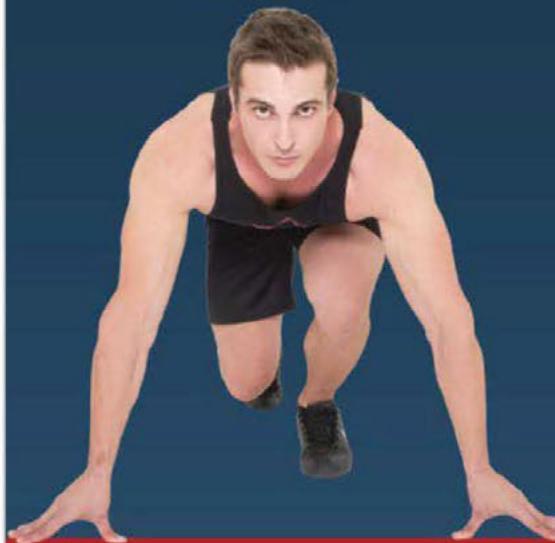
While it is certainly an achievable race distance for any level of athlete, it will test you, and the un-prepared will struggle a bit. Either way, there are few experiences more enjoyable, and it is certainly something new and exciting to try for those endurance athletes looking for a new challenge. ■

For more information on the Totalsports Xterra presented by Rehidrat® Sport series visit [www.stillwatersports.com](http://www.stillwatersports.com) or follow [@xterrasha](#) or ['like' Xterra South Africa](#).



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**Q**

UALITY SLEEP IS  
ESSENTIAL FOR  
OPTIMAL GROWTH  
AS THIS IS THE  
TIME WHEN A  
NUMBER OF BIOLOGICAL  
PROCESSES WORK TO  
REPAIR THE DAMAGE  
CAUSED DURING  
TRAINING,  
AND DAILY LIFE.

It's during REM sleep when our bodies enter a heightened anabolic state, which results in the rejuvenation and repair of the immune, nervous, skeletal and muscular systems. A number of internal processes occur at night to make this happen, in particular a pronounced anabolic hormonal response. These processes release important growth factors, such as human growth hormone (hGH) and testosterone during the night to stimulate the repair process. In fact, over 90% of your daily hGH supply is actually released while you sleep, as pulsatile secretion increases after 1-2 hours of sleep, with maximal secretion occurring during later stages of sleep.

However, while everything else is working to aid recovery, our bodies also need a steady supply of the nutrients and substrates required to repair damaged muscle tissue, and replenish whatever was depleted during training. Without sufficient amounts of amino acids, free fatty acids and glucose the anabolic process is unable to run its full course.

In addition, when the natural release of hGH stops and you run out of amino acids to synthesise new protein our bodies enter a state called nocturnal post-absorptive muscle catabolism, or NPMc. This happens every night, and it is a natural process that cannot be stopped. However, there are ways to mitigate how much muscle tissue is lost to the process.

WITHOUT  
SUFFICIENT  
AMOUNTS OF  
AMINO ACIDS,  
FREE FATTY  
ACIDS AND  
GLUCOSE THE  
ANABOLIC  
PROCESS TO  
AID RECOVERY  
IS UNABLE TO  
RUN ITS FULL  
COURSE.

» By Pedro van Gaalen, Editor

# NIGHT-TIME NUTRITION

SPARE MUSCLE TISSUE BY LIMITING  
OVERNIGHT CATABOLISM WITH PROPER  
NUTRITION AND SUPPLEMENTATION

## NIGHT-TIME FUELLING

To help fuel the nocturnal anabolic process, and limit the effects of the catabolic state that follows (this is an important distinction) there are a few tools at our disposal. One of the more controversial methods being suggested is reversing the generally recommended dietary pattern of consuming most of your calories in the morning, with a steady decrease in calorie consumption over the course of the day, with your smallest meal eaten at night, a few hours before bed.

However, this 'conventional wisdom' is increasingly being challenged. One of the main reasons is that a large, late-night meal provides the volume of macronutrients needed to support the initial anabolic repair phase, when hGH and testosterone levels are at their highest. A continued steady supply of amino acids will then help to mitigate the muscle breakdown that occurs during NPMC.

An interesting point worth noting here is that most carnivorous mammals will sleep after large feedings, with little or no interference from the digestion process – a common reason touted to avoid late night eating. The other reason to avoid eating before bed is that it limits the amount of calories that will be stored as fat, as there is no activity to 'burn' the fuel you've consumed. However, these mammals don't seem to become obese by following this eat-sleep pattern. The caveat to that statement is that they follow an eating pattern characterised by periods of intermittent fasting, so that line of reasoning should be viewed in context.

Regardless, if you're eating 'clean' and your total calorie consumption throughout the day remains constant, it may be of benefit to shift the calorie values of your meals to favour your morning meal, to break the night-time fast, and your evening meals, to support the initial nocturnal anabolic process. Your post-workout



It may be of benefit to shift the calorie values of your meals to favour your morning meal, to break the night-time fast, and your evening meals, to support the initial nocturnal anabolic process.

meal would be your other big meal of the day.

The other option that has been adopted by many bodybuilders over the years is night-time feeds – waking up at strategic points during the evening for a meal. However, this is very disruptive to natural, healthy sleeping patterns, and diminishes the overall quality of your sleep.

## SUPPLEMENT STRATEGIES

Thankfully advances in supplementation have delivered suitable solutions, in the form of specifically formulated protein products. The ranges of slow release protein supplements that are now available are extensive, and have become increasingly popular among bodybuilders.

These products contain slow-digesting proteins like casein, which fulfill a specific function in the night-time battle between protein synthesis (building new muscle tissue) and muscle breakdown.

These products provide a steady supply of amino acids that are slowly digested and released into the bloodstream for up to eight hours throughout the night. However, their role seems to be linked more closely with limiting the natural catabolism of muscle tissue during the later stages of sleep than fuelling anabolism. Either way, there is value to consuming a casein-based protein supplement before bed.



Dairy products at night have proven to be beneficial in a number of studies, as cow's milk contains both whey and casein fractions.

of studies, as cow's milk contains both whey and casein fractions. For this reason it is not uncommon for bodybuilders to bump up the protein content of their bedtime snack or supplement by mixing in some cottage cheese, or mixing their protein blend in milk instead of water. ■

## COMBINED STRATEGIES

There may also be some value in combining certain foods and supplements. There is sufficient evidence to suggest that a combination of protein sources, both the fast-digesting forms such as whey, and the slower-digesting variants such as soy and casein, may offer an ideal solution.

The initial rise in circulating amino acids from the whey help to fuel the initial anabolic process, while the continued 'trickle' of amino acids released from the soy and casein support the anti-catabolic process described earlier.

The inclusion of natural healthy fats, normally in the

form of natural and organic nut butters, helps to slow gastric emptying, which slows the digestion process even further, delivering more of these essential macronutrients to muscles over a longer period of time.

The use of dairy products at night has also proven to be beneficial in a number



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## [COVER PROFILE]

» Interview by Pedro van Gaalen, Editor  
» Images by Arthur Kwiatkowski | Arsenik Studios Inc.

**J**t just 23 years of age, Canadian fitness model and athlete, Jay Zuccato is well on his way to building his fitness empire. With a thriving online coaching business, and a rapidly growing body of published work, as well as his hordes of followers on social media, Jay is chasing his dream of becoming an internationally acclaimed fitness model. As someone who is extremely proactive in sharing his knowledge with anyone who asks, and constantly engages with the industry, be it the multitude of trade shows he attends to support his sponsor, or on the web, there is a lot even the more seasoned athletes and models can learn from this rising talent.

### Tell us a bit about yourself. What do you do for a living and what are your interests?

In addition to being a full time business student, and sponsored athlete with Optimum Nutrition, I also work as a model and online personal trainer. My interests outside of the gym include cooking, travelling, watching ice hockey, and learning about sports nutrition.

### What led you to your health and fitness-focused lifestyle?

After going away to college when I was 19, I found myself living a very unhealthy lifestyle, and I gained a significant amount of weight. I was unhappy with the direction that I was heading in, so I decided to focus on improving my health and accomplishing my life goal of becoming a fitness model.

### What is your secret to getting so lean?

There is no secret to getting lean. It all comes down to having the drive to always give it your all at the gym and, of course,

your knowledge and understanding of the importance of proper nutrition.

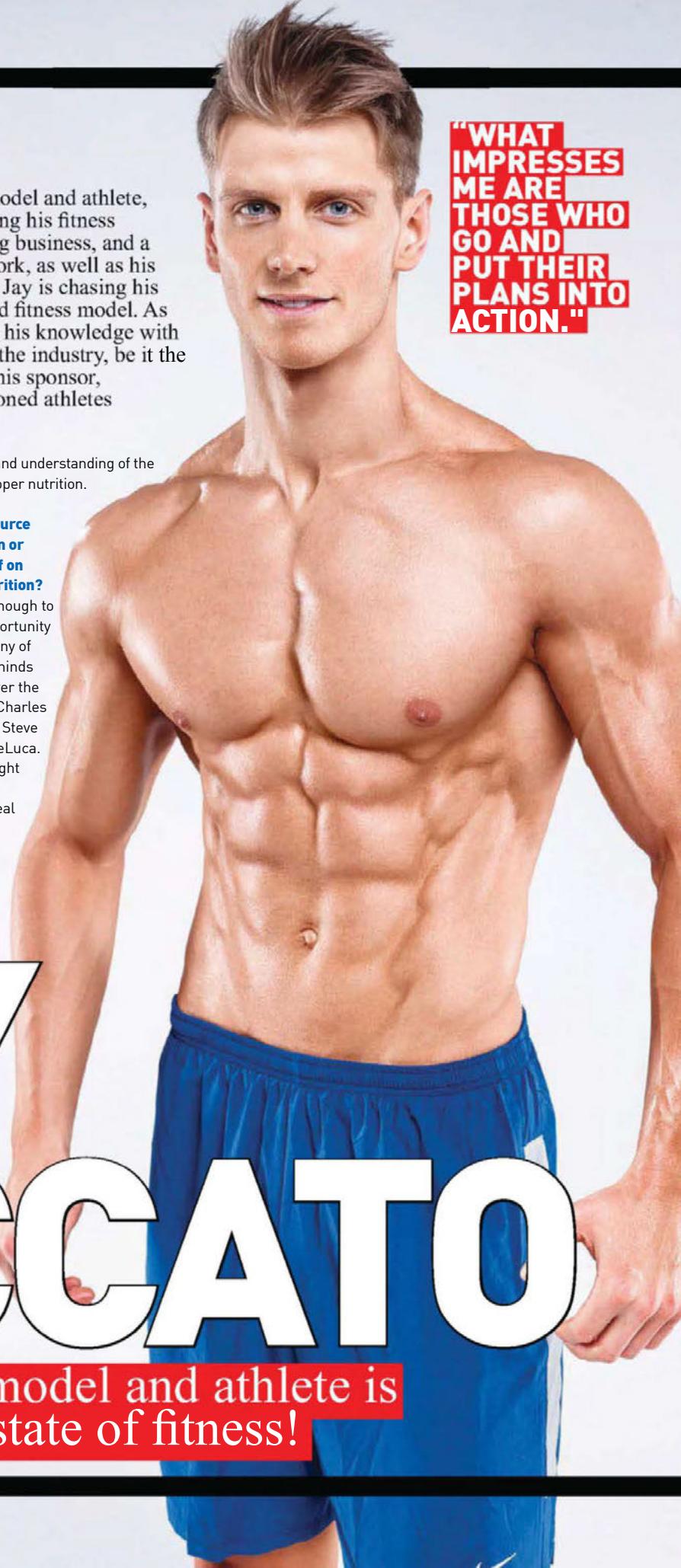
### Where do you source information from or educate yourself on training and nutrition?

I've been lucky enough to have had the opportunity to speak with many of the best fitness minds in the industry over the years, including Charles Glass, Greg Plitt, Steve Cook, and Rob DeLuca. They have all taught me so much and shared a great deal of knowledge and information with regard to their training and nutrition concepts.

**"WHAT IMPRESSES ME ARE THOSE WHO GO AND PUT THEIR PLANS INTO ACTION."**

# JAY ZUCCATO

How this Canadian model and athlete is building his empire state of fitness!



**BORN:** Hamilton, Ontario, Canada

**LIVES:** Toronto, Canada

Can-Fit Pro CPT

Fitness personality,  
spokesmodel, student

23

6'

185lbs

**SPONSORS:** Optimum Nutrition

[JayZuccato](#)

[JayZuccatoFitness](#)

#### What does your average diet consist of?

My calorie split usually consists of 90% whole, nutrient-dense food options, and the other 10% goes into my post-workout meal. Carb cycling is a huge part of my diet, and I plan high carb days twice a week when I train my legs.

#### How important are supplements in your nutrition plan?

I've always strongly believed in focusing on obtaining the majority of calories from whole nutrient-dense foods. That being said, it can be very difficult to reach your macronutrient requirements on food alone! Supplements have played an essential role in helping me reach my health and fitness goals over the years and they have truly been a vital part to my success.

#### What does your daily supplement plan look like?

I've been using Optimum Nutrition products since I first started using supplements back when I was 17 years old. My daily supplement plan is as follows:

**Morning cardio:** Amino Energy, L-Carnitine

**Breakfast:** Opti-Men (multivitamin)

**With all other meals:** CLA, Fish Oil

**Pre-Workout:** Gold Standard Pre-Workout

**Intra-Workout:** Pro BCAAs

#### What does your normal training programme look like?

**Monday:** Legs (quad focus)

**Tuesday:** Chest, calves

**Wednesday:** Back

**Thursday:** Shoulders, calves, abs

**Friday:** Legs (hamstring focus)

**Saturday:** Chest, calves

**Sunday:** Rest

#### What is your toughest workout?

There is nothing tougher than an intense leg session!

#### What other types of training do you do and why?

I will do some steady state cardio in the morning, and an abdominal circuit on Tuesday and Saturday, with some post-workout HIIT cardio on Wednesday and Thursday.

#### How do you use cardio to dial in your conditioning?

I strongly believe that the best way to create a caloric deficit is through increasing your training

**Post-Workout:** Gold Standard 100% Whey, Glyco-Maize

**Before Bed:** Gold Standard 100% Casein, Melatonin

#### Do you do any other sport or activities outside of the gym?

My favourite sport to take part in outside the gym is ice hockey. I grew up playing competitively since the age of five, and will always love being on the ice.

#### What are some of the key trends in your country that South African guys should look out for?

The current trend in Canada, and North America in general, is the rise of the Men's Physique division in fitness competitions. It is a great avenue for fitness enthusiasts to get involved in, especially for those who aspire to compete, but prefer more of a "beach body" look in comparison to bodybuilding.

#### How else are you involved in the health and fitness industry?

I'm currently running an after school programme at my old high school fitness centre. My goal is to teach these students how to weight train, and to be a mentor and positive influence on their lives.

#### What are your future ambitions in life, and in the sport?

My future ambition in life and in the fitness industry is to work towards a position where I can inspire and help change lives, in a positive way, for as many people as possible around the world.

#### What is the best piece of health and fitness-related advice anyone has ever given you?

I was blessed to have the opportunity to hang

output. Instead of eating less, I would rather keep my calories high and then incorporate extra training sessions into my schedule. This approach makes the most sense to me, and helps me stay lean all year round. I love eating and training, so why not do more of both?

#### What are your top training tips?

Enjoy the process and stay consistent with your diet and training. Trust me, the results will soon follow. One truly essential factor people tend to overlook when trying to get into shape is the importance of happiness. Even if your diet and training are perfect, without happiness your results will suffer. So take part in the activities you enjoy, and eat foods that you like, but in moderation. There's no blueprint that works for everyone, so do what is best for you.

#### What training tips do you think are most relevant to guys?

Instead of trying to lift as heavy as you can, leave your ego at the door and focus on time under tension and proper form.

out with Greg Plitt one evening during a recent visit to Canada. I told him all my ideas and what I hoped to accomplish in the fitness industry. His response was something that I will always remember: "Talking about what you want to do is easy. People tell me their goals all the time. What impresses me are those who go and put their plans into action." Greg provided me with lots of knowledge and advice that I'll never forget and will value for the rest of my life.

#### What advice would you give readers who want to get more involved in the industry?

Speak to those around the gym who compete or work in the fitness industry. Send emails or message those who inspire you on social media. Most of us love to respond, and help answer any questions you may have! Build up your network online. When you feel you're ready, book a photo shoot and use these professional images to help brand and promote yourself.



#### FAVOURITE MUSIC TO TRAIN TO?

Hip-hop and rap from the 1990s and early 2000s. I also listen to a lot of EDM podcasts!

#### FAVOURITE EXERCISE?

Single-arm linear jammer

#### FAVOURITE CHEAT MEAL?

Banana pancakes, hands down!

iPod, intra- and post-workout shakes, water, lock, and extra shoes (it snows a lot in Canada!)

#### WHAT DO YOU DO TO RELAX?

[TRAINING]

**MY FAVOURITE  
OPTIONS FOR  
PERFORMING HIIT  
CARDIO INCLUDE:**

- Bike
- Sprints
- Jacob's Ladder
- Rope climbing machine
- Rowing machine

**JAY'S HIIT  
CARDIO ROUTINE:**

Perform intervals for a total of 15-20 minutes.

Interval structure:

1. 30 seconds @ 100% intensity

2. 90 seconds @ low intensity, steady state

Repeat the intervals until you reach your target time.

*"The combination of high intensity interval training (HIIT) cardio, followed by targeted ab work, works best for me, as it reduces my body fat levels and develops my abs. This workout can be done on its own, or after a weight training session."*



# COVER MODEL ABDOMINAL WORKOUT

» Photography by Arthur Kwiatkowski, Arsenik Studios Inc.

## JAY ZUCCATO'S DOUBLE TROUBLE CARDIO AND AB WORKOUT, FOR A COVER MODEL MID-SECTION

**W**hile it takes a lot of dedication and effort in the kitchen to create a mid-section worthy of a magazine cover, your approach to cardio and ab training is also extremely important. International cover model and Optimum Nutrition-sponsored athlete, Jay Zuccato ([www.jayzuccato.com](http://www.jayzuccato.com)) has developed quite a reputation and following from around the world for his chiselled abs and lean mid-section.

**We got the inside scoop on his approach to creating a six pack worthy of a fitness mag cover...**

### JAY'S ABDOMINAL TRAINING CIRCUIT

**HOW TO DO IT:** Perform each exercise consecutively. Move immediately from one to the next once you have completed the required reps. Don't rest between exercises, but you can take a short break between circuits. Complete the circuit at least two times.

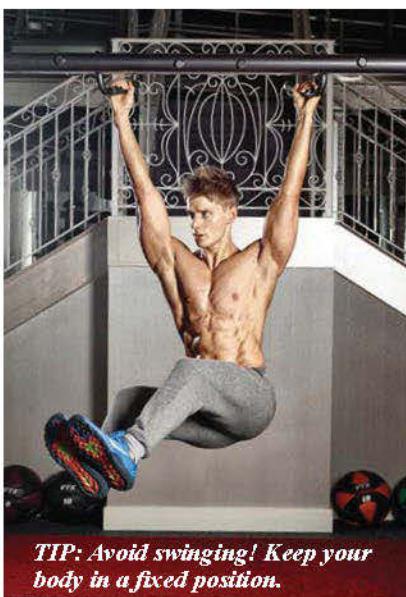
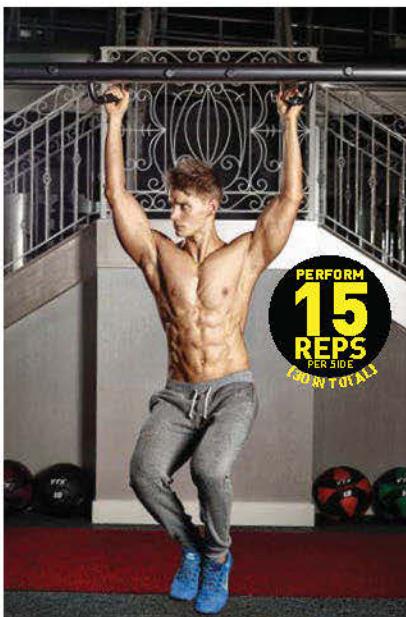
#### JAY'S TOP AB TRAINING TIPS:

- Focus on breathing! Exhaling is important to fully contract and engage your abdominals.
- Always emphasise slow, controlled reps.
- Work until you feel the burn!

*“Complete this workout after your HIIT cardio session.”*

# THE CIRCUIT: ...

## HANGING TWISTING LEG RAISES



**TIP:** Avoid swinging! Keep your body in a fixed position.

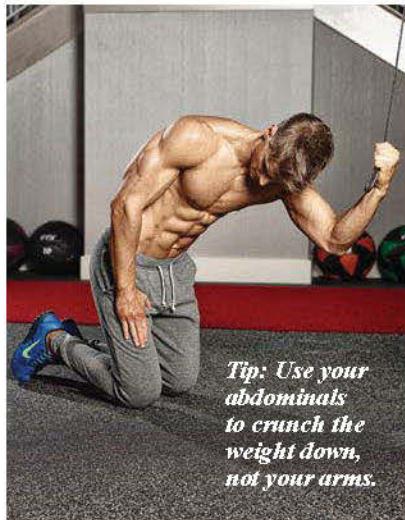
**HOW TO DO IT:** Grasp and hang from a high bar. Raise your legs up, but do not flex your hips. As you lift your legs twist them to one side. Slowly lower your legs back down to the starting position and repeat for the required reps, before switching sides.

**AB MUSCLES TARGETED:**  
OBLIQUES & RECTUS ABDOMINIS

## CABLE OBLIQUE CRUNCHES

**HOW TO DO IT:** Kneel below a high pulley. Grasp a single stirrup attachment with one hand. Position your hips back and maintain them in a flexed position throughout, allowing the resistance on the cable to lift your torso up and extend your spine. Keeping your arm in a fixed position, flex your waist so that your elbow travels toward your mid-thigh on the same side. Hold the contraction for a few seconds at the bottom, in the crunched position. Slowly extend back up to return to the starting position while keeping your abdominals engaged. Repeat for the required reps before switching sides.

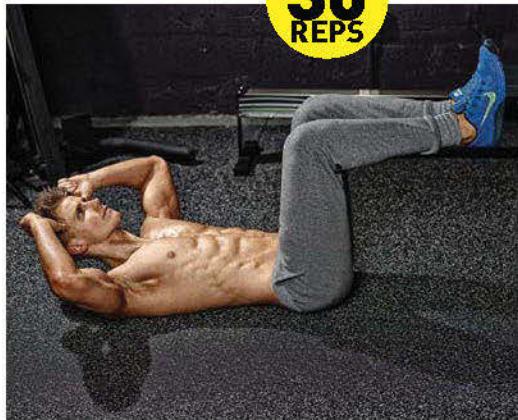
**AB MUSCLES TARGETED: OBLIQUES**



*Tip: Use your abdominals to crunch the weight down, not your arms.*

## CRUNCHES

PERFORM  
**30**  
REPS



**HOW TO DO IT:** Lie on your back, on the floor or on a mat. Raise your legs up, bend your knees and position your legs at a 90 degree angle. Keep your hands to the side of your head, or in front of you. Flex your waist to raise your upper torso off the floor. Keeping your lower back on the mat, raise your torso up as high as possible. Return to the starting position by slowly lowering your torso back to the floor, until your shoulders touch. Repeat for the required reps.

**AB MUSCLES TARGETED:**  
RECTUS ABDOMINIS

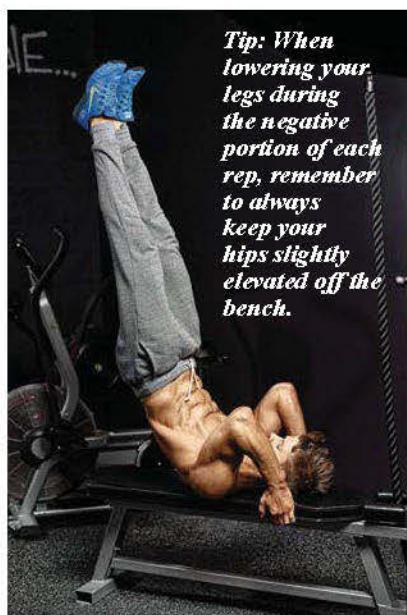
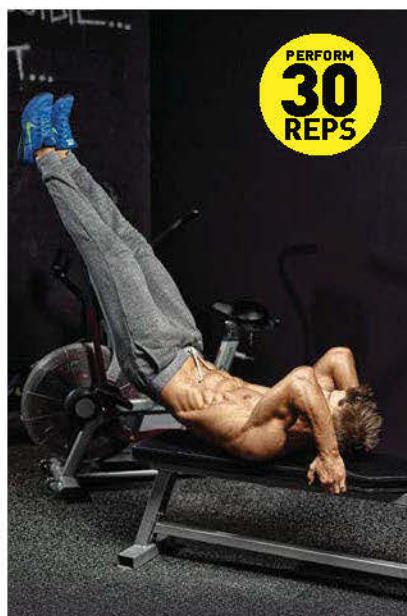
*Tip: Avoid pulling your neck forward.*

# Sculpt a chiselled mid-section with these 6 effective moves.

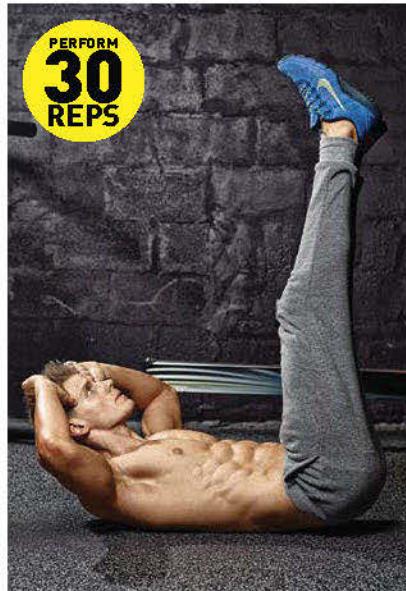
## LYING STRAIGHT LEG HIP RAISE

**HOW TO DO IT:** Lie supine (on your back) on a bench. Grasp both sides of the bench for support. Raise your extended legs and hips off the bench. Flex your waist and bring your legs up. Return to the suspended starting position and repeat for the required reps.

**AB MUSCLES TARGETED:**  
RECTUS ABDOMINIS



## TOE TOUCHERS



**HOW TO DO IT:** Lie supine (on your back) on the floor or on a mat. Keeping your legs straight, lift them up, and point your arms up. Flex your waist and contract your abdominals to raise your upper torso off the floor. 'Pulse' up to move your fingers towards your toes. Return to the starting position until the back of your shoulders make contact with the floor, then repeat for the required reps.

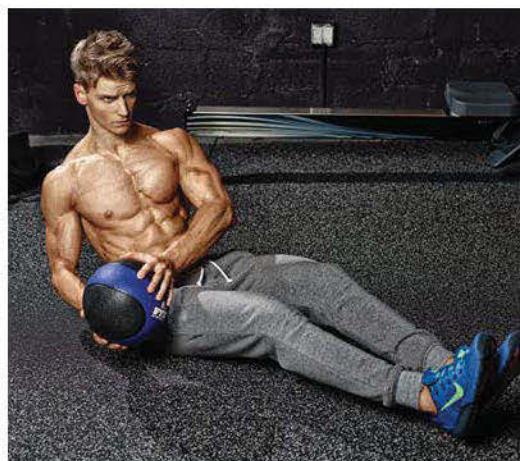
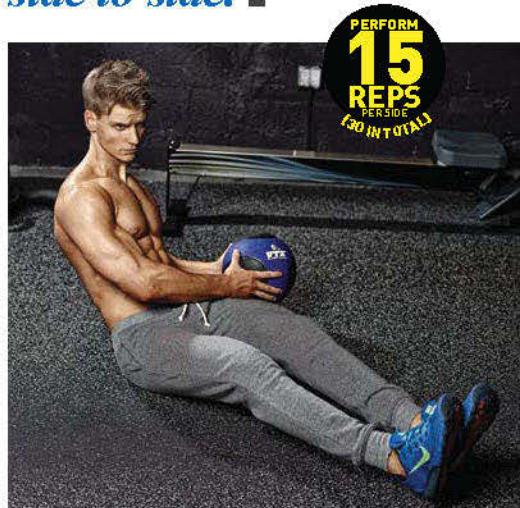
**AB MUSCLES TARGETED:**  
RECTUS ABDOMINIS

## OBLIQUE TWISTS

**HOW TO DO IT:** Sit on the floor with your knees bent and your heels on the ground. Hold a medicine ball with both hands in front of you. Brace and engage your core as you rotate your torso to the left. Tap the ball on the floor just outside of your left hip. Pull the ball back into your chest and rotate to the right. Continue alternating sides for the required reps.

**AB MUSCLES TARGETED:**  
OBLIQUES

***Tip: Remember to twist your torso, don't use your arms to move the ball from side to side.*** ■



## 7 WAYS TO SHED THAT BELLY FAT FOR A RIPPED 6 PACK

WHETHER YOU'RE A COMPETITIVE PHYSIQUE ATHLETE OR SIMPLY SOMEONE WHO TAKES PRIDE IN YOUR PHYSIQUE, ACHIEVING A SHREDDED MID-SECTION IS PROBABLY YOUR MAIN GOAL (IN ADDITION TO PACKING ON AS MUCH MUSCLE AS POSSIBLE, OF COURSE).

Unfortunately achieving a thin, ripped six pack requires more than just a hardcore ab routine (check out our cover model, Jay Zuccato's six pack ab routine on page 70).

At the most basic level, losing body fat is about creating a negative calorie balance – a state whereby your body burns more calories than you consume over a set period of time. However, the process is a little more complicated than that as there are a number of interrelated factors that influence your ability to achieve the ultimate ripped mid-section. To achieve the best success there are seven basic guidelines that you need to follow:

# GUT BUSTING GUIDE

1

## REDUCE YOUR CALORIES

We've already touched on this point, but the importance of creating a negative calorie balance cannot be overstated enough.

You can achieve this state by training more, if you don't think you can stick to a calorie-restricted meal plan, but this can lead to a number of undesirable side effects. For starters, the more you train the more catabolic you become. It also leads to a rise

in catabolic and stress hormone production, which makes it harder to hang on to muscle mass.

High intensity, high volume training also results in compensatory hunger, a physiological response driven by hormones that prompts you to eat more to help your body recover. This is a powerful stimulator of hunger, with some often consuming more calories than

they burnt through exercise as a result.

By manipulating your diet to create a slight calorie deficit every day, while also training more efficiently and effectively, you stand a better chance of reducing that belly over time, while sparing more muscle in the process.

This process works because, when we limit the calories we

consume, the body has to tap into stored energy, the most prominent and abundant form of which is fat, to fuel our workouts and our basal (basic) metabolism. The trick to successfully dropping body fat, while maintaining as much muscle as possible, is to make small adjustments to your calorie intake over time, but never more than 10-15% of your normal diet, or 500 calories a day.



By timing the bulk of our carb intake to specific meals, we're able to limit the amount of excess energy that gets stored as fat.

## 2

### MANAGE INSULIN

**Insulin is a hormone produced in the pancreas. It's central in regulating carbohydrate and fat metabolism in the body as it causes cells in the liver, skeletal muscle and fat tissue to absorb glucose from the blood.**

Put simply, insulin moves sugar from the bloodstream, which we obtain from the food we eat, into cells throughout the body. It is first converted into glycogen, which is stored in the liver and muscle cells as glycogen, and once these reserves are full any excess glycogen is stored in the form of triglycerides in fat cells. With the exception of diabetes and metabolic syndrome, insulin is provided within the body at a constant proportion to perform these tasks.

By reducing the amount of insulin our body produces every day, by limiting the total amount of carbs we eat, and timing (and confining) the bulk of our carb intake to specific meals, we're able to limit the amount of excess energy that gets stored as fat.

In addition, this dietary approach also promotes an internal environment where body fat becomes the predominant source of fuel for the majority of our activities. This happens when we remove the body's dominant fuel source – glucose – by cutting out sugar and reducing carbohydrates. Once this happens your body starts metabolising your body fat, as well as the fat and amino acids derived from your diet. Eventually your body will become more efficient at using fat for fuel, even when there is a slight increase in your carb intake, as you also become more insulin sensitive.

## 3

### INCREASE DAILY ENERGY EXPENDITURE

To help create that essential negative calorie balance you can make intelligent use of cardio to boost the number of calories you burn each day. If you include some cardio after your weight training session, keep it to 30-45 minutes of steady state, medium intensity cardio. As you're in a glycogen depleted state from the weight training, this cardio will tap into fat stores.

If you are engaging in a standalone cardio session, a few high intensity interval session will help to blast those extra calories. The 'after-burn' effect of this type of training will also ensure your body keeps consuming calories once the exercise session has ended, as the body initiates a number of biological process to recover and return to a state of homeostasis.

Another tip is to get more active throughout the day. By increasing the amount of 'normal' daily activity you perform each day you can easily burn an extra 100 calories."

perform each day you can easily burn an extra 100 calories. Take the stairs instead of the lift, go for a walk around the office every hour, or park your car at the far end of the office or shopping mall parking lot and walk the extra few metres to boost your daily calorie expenditure.



"**GET MORE ACTIVE THROUGHOUT THE DAY. BY INCREASING THE AMOUNT OF 'NORMAL' DAILY ACTIVITY YOU PERFORM EACH DAY YOU CAN EASILY BURN AN EXTRA 100 CALORIES."**

# SPOT REDUCE FAT



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\*Note: this is not a fat loss product. Body Sculpt assist with the tightening of trouble areas. Best results achieved when combined with an exercise routine and calorie controlled diet.

## FEATURE

### 4

## BOOST YOUR PROTEIN INTAKE

If you engage in any form of fasted state cardio, or perform HIIT cardio sessions, it is important to try and limit muscle loss, especially if you are following a low carb, high fat (LCHF) dietary approach.

This can be achieved by consuming an adequate supply of amino acids during and after your training session. This limits muscle breakdown during training, to some degree, by supplying free form amino acids in the bloodstream, which can be metabolised through a process known as gluconeogenesis, to meet some of the body's energy requirements.

A higher protein content in each meal will also increase the thermic effect of the food you eat. The higher the protein content of your food, the more work your digestive system needs to do to digest and process it. This means you burn more calories (albeit minimal amounts) when eating meals that contain more protein. When combined with fibrous fruits and vegetables you can boost this thermic effect even further.

Proteins and fats are also essential for the production and release of a number of anabolic hormones, which help to boost your muscle gains, while also working to burn more fat. For example, increased protein intake can positively impact on glucagon production, which opposes the action of insulin to prolong the use of stored fat as an energy source.

### 5

## BECOME A CARB CON-NOISSEUR

The role of insulin in enhancing fat loss and reducing fat accumulation has already been explained.

However, it is important to note that the extreme LCHF approach that is currently being advocated is not ideal for everyone. As highly active individuals it is essential that you determine what the appropriate level of carb intake is for your body, and your energy and performance requirements, as well as your goals, and that you're strict about the types of carbs you eat each day.

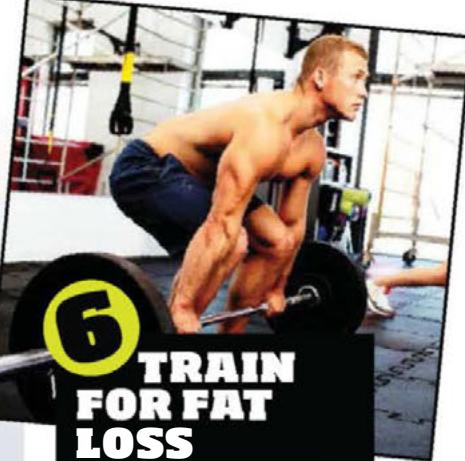
While we advocate carb manipulation techniques, such as carb cycling and carb backloading, to manage your insulin response and get the most from this highly anabolic hormone, you still need to keep the quality of the carbs you eat in mind. The general consensus is that complex carbs from natural foods should be the dominant sources of carbs in your diet, with as little processed carbs and simple sugar in your eating plan as possible, if at all. High

glycaemic index (GI) sources of natural carbs provide the most benefit, while low GI carb intake should be limited to before and after your workout to assist with

training intensity and glycogen restoration. These should also be derived from natural sources as often as possible, if not derived from supplements.



**"BOOST YOUR BODY'S THERMIC EFFECT BY COMBINING HIGH PROTEIN FOOD WITH FIBROUS FRUITS AND VEGETABLES."**



### 6

## TRAIN FOR FAT LOSS

The best approach to weight training for fat loss is to predominantly use heavy compound lifts to add muscle to your frame, and build greater strength. These moves, which include bench presses, squats, deadlifts, military presses and push presses, for example, use multiple muscle groups, including all your major muscles. This burns more calories per rep, which is what you want when trying to create a negative calorie balance. When these types of exercises are used in high intensity forms of training, such as Tabatas or metabolic conditioning workouts, they also boost the metabolic 'after burn' effect, which further assists fat loss.



### 7

## SUPPLEMENT INTELLIGENTLY

The use of thermogenic fat burners and body toners will help to boost your metabolism and preferentially tap into fat stores while you train.

In terms of promoting sustained fat loss, conjugated linoleic acid has been clinically proven to reduce total body fat and increase lean body

mass. As it is not thermogenic in nature it is also an ideal supplement for sustained, long-term use.

However, thermogenic fat burners remain the most effective products for fat loss. By increasing body temperature, and, subsequently, your

metabolic rate, they help your body burn more calories throughout the day, most of which comes from fat stores. However, prolonged use is ill-advised due to the effect that the stimulants in many of these products have on your nervous and endocrine systems. ■



# PRODUCT REVIEW

**REVIEW BY** By Jacques Fagan, WBFF Pro, cover model and USN Brand Ambassador

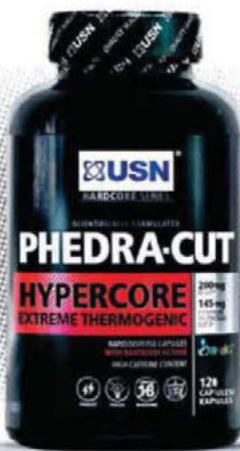
In the lead up to my second appearance at the WBFF Worlds in Las Vegas, I have to change my nutrition, training and supplement strategy to make ensure I deliver a different physique compared to the one I brought to the stage last year. Over the last six months I have focused on the weak points that the judges pointed out. I know that progress takes time, but I use the tools at my disposal to get there faster. Here is my go-to supplement strategy:



## LEAN-8

My food selection will be refined to the point of getting pretty bland, especially as I edge closer to the competition. I tend to stick to single ingredient whole foods as a foundation, and I strategically use Lean-8 during the day as a snack option, as well as a late-night meal option before bed (usually with a handful of blueberries). This high quality, multi-protein blend gives me the consistent

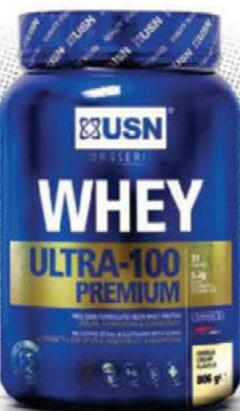
amino acid uptake that I need to maintain my lean mass while I continue to shed fat. If you want to add lean mass, this is the product for you! I know that this shake satisfies my protein demands, and the flavour systems taste amazing.



## PHEDRA-CUT HYPERCORE

I need to stand on stage at around 3% and 80kg. I'm up against the world's best physique athletes, so I need to ensure that I'm the leanest and fullest I can be, without looking like I could compete as a Muscle Model. There is no doubt that stringent dieting negatively influence the metabolism over time, and Phedra-Cut HYPERCORE is the quality thermogenic compound that I need to keep shedding weight and unwanted body fat. I use this

product with a five-day on, two-day off cycle, while cycling my carbohydrates around my two daily training sessions so that I can improve my focus and output. I know that in 2015 I'll be coming in the leanest I've ever been!



## WHEY ULTRA-100

Everyone knows the importance of whey protein, and I've made it a part of my supplementation plan over the last five years. Post-workout, it's been shown to stimulate muscle-protein synthesis, while reducing the effects of fatigue. However, not all wheys are formulated equally, and this is the most superior product on the market. What's on the label is what's in the tub, so I'm never

in any doubt about my calorie intake over the course of my prep as I prepare to take on the international stage. Nothing beats this premium whey! I hit my protein score and I complement my workout with faster recovery.



# MEAL TIMING VS MEAL FREQUENCY

## DETERMINING WHICH IS MORE IMPORTANT FOR BODY COMPOSITION

» BY Peter Carvell, owner of sixpackfactory.com

**DO THE FREQUENCY OF YOUR MEALS INFLUENCE HOW RIPPED YOU GET? OR DOES PERFECTING YOUR MEAL COMPOSITION LEAD TO SUPERIOR RESULTS? OR PERHAPS THESE ARE JUST SURE-FIRE WAYS TO NEEDLESSLY STRESS YOURSELF OUT? ARE YOU GETTING BOGGED DOWN BY THE DETAILS?**



Once you've advanced from the realm of a beginner, where you're generally preoccupied with simply figuring out how many calories you need to consume each day to reach your desired body composition goals, it pays to start focusing on the other, often finer details that influence the magnitude of the results you experience.

Two nutritional concepts that professionals seem to constantly change their viewpoints on are meal timing and meal frequency. But do they really matter, and do they hold the secret to getting really lean?

For instance, conventional wisdom in previous years dictated that to burn fat faster

we needed to eat six meals a day. It was the gold standard in the body building and physique industry. However, today many people are proving otherwise. In fact, many individuals are eating just two to three meals per day and are seeing results. So what gives? Are many of these old notions simply incorrect?

## DEFINING THE CONCEPTS

To determine the relevance of meal timing and meal frequency in a rapidly changing health and fitness landscape it is pertinent to first fully define what these two terms mean.

• **MEAL TIMING:** Meal timing refers to the time of day when you eat your meals. For instance, eating breakfast immediately upon waking, feasting on a pre-bed time meal, consuming all your carbs after an exercise session, or eating your last meal at 20h00 and avoiding food until breakfast. These are all basic examples of meal timing.



• **MEAL FREQUENCY:** Meal frequency describes how often you eat throughout the day, and subsequently determines how many meals you consume each day. For example, eating every 2-3 hours, or consuming three meals per day, one every 5-6 hours.

Both of these concepts refer less to what you're eating and focus more on how you consume your diet. As such, they're advanced concepts that should only be considered once you have the basics of meal composition down, such as how many calories you eat at each meal, and in total, your macronutrient splits, and the specific food choices you make.



## CRITICAL THINKING

In terms of meal frequency, should the six-meals-a-day approach be considered superior? Many people claim that by eating this regularly you can significantly boost your metabolism, which aids fat loss. As it turns out, however, studies have yet to prove this as true.

Each time you eat a meal you'll get a 'thermic boost', where your body will basically expend calories simply breaking down and digesting the food you've eaten. The number of calories your body burns through this digestive process depends on the type and amount of food you consume. Protein and fibre both deliver a higher 'thermic effect of food' (TEF) value, which means these macronutrients require more energy to process. Simple carbs and fats are easier to process so require less energy.

The key thing to note though is that a small meal will create a corresponding small boost in calorie consumption through TEF. A large meal, on the other hand, will create a larger boost.

At the end of the day, one diet using six meals and one using three, if all other things are equal (total calories and food choices), the total calorie burn from digestion will be the same.

This was proven in a study published in 1997, in the British Journal of Nutrition, where researchers conducted a meta-analysis where they compared a number of different studies that reviewed the influence of meal frequency and the resultant changes in body weight. The researchers noted that there was no significant relationship between nibbling meal patterns or gorging meal patterns on body weight changes (assuming equal calories). Instead, they noted any changes seen are more likely to be due to changes in the calorie balance equation.

Keep in mind, if you move from a three meal pattern to a six meal pattern, but don't halve the size of your meals, you will consume more total calories, which will lead to weight gain as you're no longer in an energy deficit.

Similarly, another study published in the British Journal of Nutrition, this one in 2010, assessed two groups; a three-meal-frequency group and a six-meal-frequency group. In the study both groups consumed a diet that created a calorie deficit for an eight week period. The results showed that there was no difference in total body weight and fat lost between the groups, which meant that meal frequency did nothing to boost energy consumption. In addition, there was also no change in the levels of gut peptides, including peptide YY and ghrelin.

At the other end of the spectrum, you can look at a more extreme approach known as intermittent fasting (IF), which is rapidly rising in popularity. There are a number of different IF protocols currently in use, but the most popular version requires adherents to typically fast for either an entire 24 hour period, while eating during the subsequent 24 hours, which is commonly known as the 'every other day method'. The other popular option is to fast for about 16 hours each day, which means adherents eat all their daily meals within an eight hour window. Proponents of this protocol claim it's easier to stick with their diet since they can eat larger sized meals within that eight hour window, which makes them feel more satisfied. They also claim hunger is virtually non-existent during the fast (once the body adapts) and, as such, they can maintain a reduced calorie intake with ease. It is, however, important to note that this is not the same for all individuals, as many people also report the opposite – that their body never adapts, and that hunger is always an issue.

Accordingly, based on the results of the studies cited, and the experience of those adopting an IF approach, there's no need to use this protocol to lose weight, and for certain individuals there is no advantage to doing so.

However, having said that, there may be

**"KEEP IN MIND, IF YOU MOVE FROM A THREE MEAL PATTERN TO A SIX MEAL PATTERN, BUT DON'T HALVE THE SIZE OF YOUR MEALS, YOU WILL CONSUME MORE TOTAL CALORIES, WHICH WILL LEAD TO WEIGHT GAIN AS YOU'RE NO LONGER IN AN ENERGY DEFICIT."**

INTERMITTENT FASTING (IF) IS RAPIDLY RISING IN POPULARITY. THE MOST POPULAR VERSIONS ARE FASTING FOR EITHER AN ENTIRE 24 HOUR PERIOD, WHILE EATING DURING THE SUBSEQUENT 24 HOURS, OR TO FAST FOR ABOUT 16 HOURS EACH DAY, WHICH MEANS ADHERENTS EAT ALL THEIR DAILY MEALS WITHIN AN EIGHT HOUR WINDOW.



various health benefits to an IF dieting protocol as various studies have shown that it can help to normalise insulin and leptin sensitivity, increase the release of growth hormone in the body, which may stimulate greater muscle mass and reduce the signs of ageing, and can reduce the risk of myocardial infarction and stroke.

Another touted benefit of eating more frequently throughout the day is greater control over hunger. Eating every three hours may help to stabilise blood glucose levels better than other meal frequency protocols, resulting in fewer blood sugar crashes and the ravenous hunger that often follows.

So, how does this notion stack up? Well, it turns out that the results are variable. Certain studies, such as the study titled "The influence of higher protein intake and greater eating frequency on appetite control in overweight and obese men", published in Obesity in 2010, illustrate that subjects are more satisfied after a lower meal frequency pattern.

However, there are other studies that show the opposite effect. For instance, a local study conducted by Speechley et al, at the Department of Physiology, University of the Witwatersrand Medical School, on controlling appetite with greater meal frequency, concluded that "when the nutrient load was spread into equal amounts and consumed evenly through the day in lean healthy males, there was an enhanced control of appetite. This greater control of satiety when consuming smaller multiple meals may possibly be linked to an attenuation in insulin response although clearly both other physical (gastric stretch) and physiological (release of gastric hormones) factors may also be affected by the periodicity of eating."

Based on this evidence, determining the ideal meal frequency for your physique and body composition goals should be based on personal preference. When it comes to health, available evidence suggests some degree of IF may be more beneficial, otherwise eating at least 3-4 times per day will help curb your hunger. >

## CRACKING THE TIMING CODE

Once you've established your optimal meal frequency, meal timing must be considered. The time at which you eat each of your meals can influence how effectively your body is able to utilise the foods you eat for energy and, subsequently, how much is stored as fat.

Accordingly, if you get this element right you could end up much leaner. The four key times of the day when you really want to focus on meal timing should be breakfast, the pre- and post-workout period, and your pre-bed meal.

### 1. BREAKFAST



If you've been doing some reading, you've likely heard both sides of the story. Some people firmly believe that it's best to skip breakfast and wait until lunch to eat. Others believe that eating a morning meal will help prevent overeating later in the day and keep your hunger under control. But what does the research say? Studies have illustrated that those who consume a high protein, high fibre breakfast have greater appetite control, blood sugar control, and an improved mood throughout the day, and also maintain a lower BMI. Keep in mind that this isn't a direct influence on your ability to burn fat, however. Rather, the simple combination of stabilised blood glucose levels may prevent overeating later in the day, which would lead to a calorie surplus.

#### MEAL COMPOSITION:

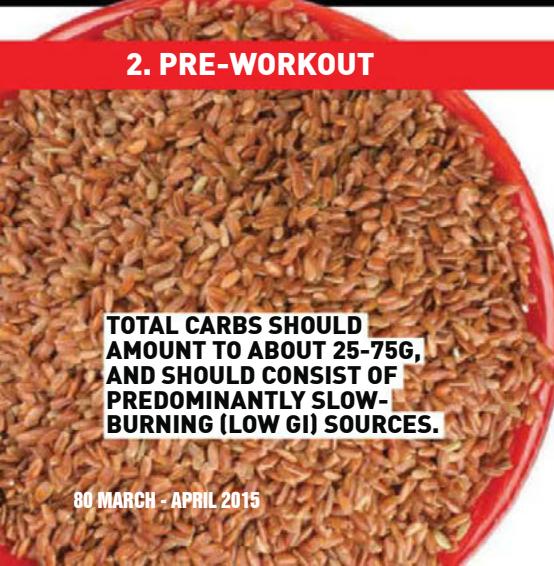
As noted above, the high-protein, high-fibre combo is best. The remaining macros (fats and carbs) will depend on your goals at the time. Someone who is building muscle may add a hearty bowl of oatmeal and some nut butter, while those who

are looking to lose fat may stick to a few berries and almonds. Likewise, also take your workout schedule into account. If your breakfast meal happens to be your post-workout meal, you'll need to follow proper post-workout guidelines, as mentioned below. Macro

recommendations are never a one-size fits all deal, so look at your own individual situation very carefully.

**FINAL THOUGHTS:** There's little research that either proves or disproves that eating breakfast boosts fat burning, but it does seem that those who do, demonstrate superior control over their food choices for the rest of the day. This, in turn, could yield better weight loss results. With that said, if you know that you feel best after skipping breakfast, then do so. Just ensure that your choice doesn't negatively impact your ability to hit your daily target calorie and macro counts.

### 2. PRE-WORKOUT



**TOTAL CARBS SHOULD AMOUNT TO ABOUT 25-75G, AND SHOULD CONSIST OF PREDOMINANTLY SLOW-BURNING (LOW GI) SOURCES.**

Think of pre-workout nutrition as your fuel. Accordingly, consider this: If you were to take your car out for a long drive to another city, would you gas up first? You'd want a full tank to start out with as a half empty tank wouldn't get you very far. The same applies to your food intake; if you want to maximise your workout performance you'll need to fuel up in advance.

**MEAL COMPOSITION:** Pre-workout macro recommendations depend on your goal and the type of workout you have planned. Generally, this means consuming both carbohydrates

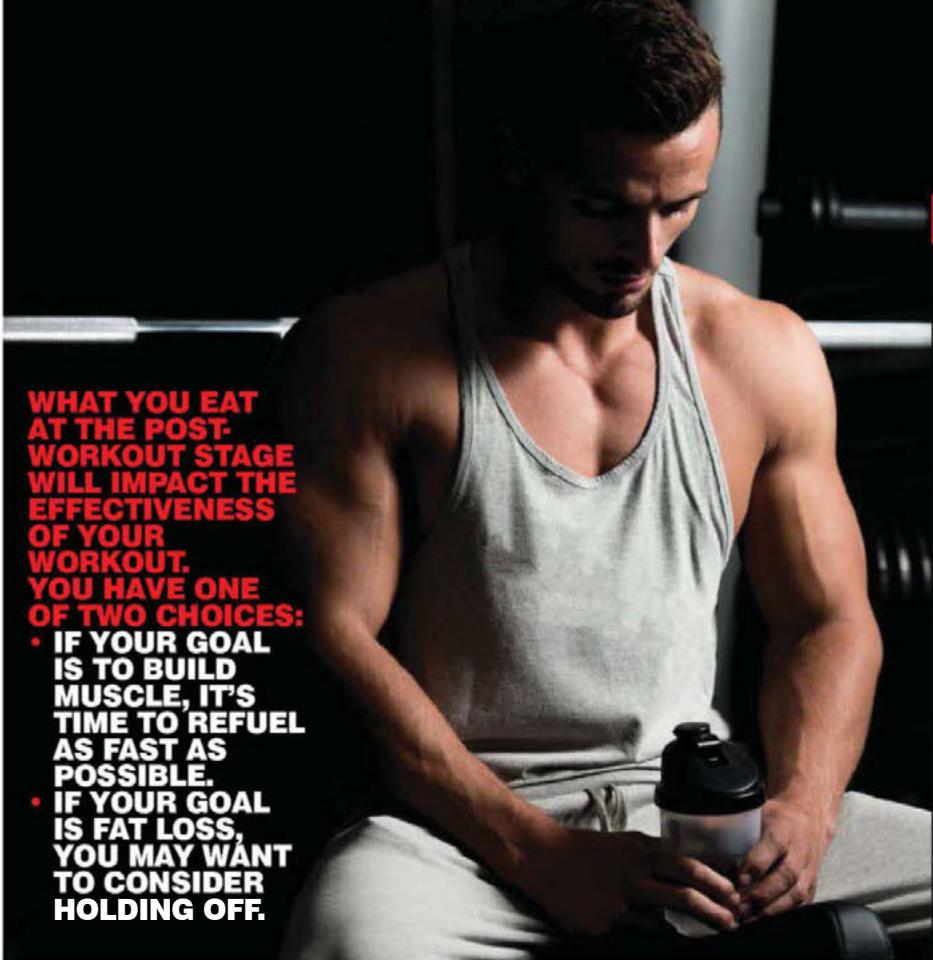


### THE EXCEPTION TO THE RULE?

**Fasted training.** While you should never attempt an intense weight lifting workout in a fasted state, those cardio sessions can certainly be performed this way. Your body will have very low baseline levels of insulin at this time, which help to ramp up the degree to which fat breakdown occurs. This protocol is also useful when trying to target stubborn body fat cells, as the fasted-state exercise will increase blood flow to the areas of the body where the stubborn body fat is located, distributing more catecholamines, which then help to boost the rate of overall fat burning through increased fat cell lipolysis and oxidation. A study published in the scientific journal *Acta Physiologica* (Oxford), in 2007, titled "Effects of a 3-day fast on regional lipid and glucose metabolism in human skeletal muscle and adipose tissue", supports these effects.

(the body's preferred source of fuel for intense exercise), along with adequate protein, 1-3 hours prior to the session. Portion sizes should be sufficient to energise, but shouldn't leave you feeling weighed down, or work to the detriment of optimal fat burning, if that's your main aim. Protein intake of around 25-40g, and total carbs should amount to about 25-75g, and should consist of predominantly slow-burning (low GI) sources. However, someone hoping to build muscle will consume far more carbs than someone looking to burn fat. Even when fat loss is the goal however, don't skip over carbs entirely if you have a high intensity session planned. A low blood glucose level due to insufficient carb intake is the fastest way to derail your workout intensity. Aim for a minimum of 10-15g in this instance. If cutting back this low, you might also consider bumping up your dietary fat intake slightly to increase energy during the workout, which also keeps insulin low to improve the rate of fatty acid breakdown in the body.

**FINAL THOUGHTS:** When it comes to meal timing, the pre-workout period is one of the most important ones to consider. Always consider your goals, the type of workout you are doing, and what the rest of your diet looks like when planning this meal. Any time you cut carbohydrates prior to your workout, your top-end performance will suffer, but the trade-off is often increased fat metabolism.



**WHAT YOU EAT AT THE POST-WORKOUT STAGE WILL IMPACT THE EFFECTIVENESS OF YOUR WORKOUT.**  
**YOU HAVE ONE OF TWO CHOICES:**

- IF YOUR GOAL IS TO BUILD MUSCLE, IT'S TIME TO REFUEL AS FAST AS POSSIBLE.**
- IF YOUR GOAL IS FAT LOSS, YOU MAY WANT TO CONSIDER HOLDING OFF.**

### 3. POST-WORKOUT

Once you've finished an intense session your damaged muscles need amino acids to start repairing themselves, and your muscle cells need glucose to replenish depleted glycogen stores. Accordingly, what you eat at this stage will impact the effectiveness of your workout. As far as body composition is concerned, you have one of two choices. If your goal is to build muscle, it's time to refuel as fast as possible. You want to halt your catabolic state, and create an anabolic state as quickly as possible, which means boosting insulin levels. Do this with a fast-acting protein and a fast acting carbohydrate source. If your goal is fat loss, you may want to consider holding off. The reason for this is because, during exercise you're ramping up your body's natural 'fight or flight' response, which causes your sympathetic nervous system to go into overdrive. This extra stimulation can help you to continue to burn fat long after your workout is done. If, on the other hand, you keep insulin low, the minute you put any type of carb, or even protein (protein still has a small impact), you will begin releasing insulin. As we saw earlier, insulin will shut down fat lipolysis, which slows fat loss.

**• MEAL COMPOSITION:** If muscle building is your goal, you want to spike insulin and provide the building blocks for more muscle growth. Protein plus carbs will do the trick. Fast acting sources are ideal here as they'll help you accomplish the insulin spike you're looking for. If fat loss is the goal, do the opposite: avoid

eating in the post-workout period and, after about an hour, eat a meal that will keep insulin as low as possible. If you opt to go this route, just keep drinking filtered water. Then, once your 60 minute post-workout window is up, you can then proceed to eat. Slow digesting protein along with some healthy fats will do the trick nicely. If you start seeing recovery issues using this approach then try adding a few slow-release carbs into that meal as well. They'll help restore muscle glycogen better, and may improve recovery.

**• FINAL THOUGHTS:** What you do in the post-workout period should be determined by your goal. For muscle building your approach is clear, but when it's fat loss there's more controversy. Just remember that whatever strategy you choose, you should still be recovering well enough to keep up with your workout sessions. If that starts to slip, whatever strategy you're using needs to be altered.

### 4. BEFORE BED

*As you lay down to sleep, your metabolic rate will decrease, which means you won't burn many calories. Accordingly, if you eat a big meal and climb into bed you're laying the foundation for fat gain. Worse, if you spike insulin before bed, you may experience a resulting crash mid-sleep, causing you to wake up and disrupt the natural growth hormone release that could be taking place.*

*Conversely, if you eat too little, or eat your last meal too early in the evening, you may run out of fuel during the night, and will transition into a catabolic state. The solution is to find the middle ground.*

**• MEAL COMPOSITION:** You want a decent sized meal about 2-3 hours before bed that's rich in slow digesting protein, and moderate in healthy fat. Don't overload on the fat content or you'll experience a lengthy digestion process, which causes an increase in blood flow to the abdominal region – a sure way to make it challenging to sleep. Try some cottage cheese with almond butter or a small piece of lean grilled steak with a few almonds. Just remember, whatever you eat before bed still forms part of your daily calorie intake. Too much will take you out of the calorie deficit you created during the day, and fat loss will not occur.

**• FINAL THOUGHTS:** In general there is nothing wrong with eating before bed, even if your goal is fat loss, provided you account for the calories consumed, time the meal properly, and choose foods that will work with your body to accomplish its goals.

*Before going to bed you want a decent sized meal about 2-3 hours before you sleep, that's rich in slow digesting protein, and moderate in healthy fat.*



### IN CONCLUSION

**MEAL FREQUENCY IS LESS OF AN ISSUE TO WORRY ABOUT THAN MEAL TIMING. HOWEVER, BOTH OF THESE ARE COMPLETELY UNIMPORTANT IF YOU HAVEN'T PERFECTED THE CONCEPTS OF MEAL COMPOSITION AND TOTAL CALORIE INTAKE. GET THAT RIGHT FIRST THEN START TWEAKING WHEN YOU CONSUME YOUR FOOD.** ■

BY Pedro van Gaalen, Editor

In search of the  
best alternative gyms  
in South Africa

# OFF THE BEATEN TRACK

## BUC FITNESS CLUB

Owned by: **ANDREW ROTHSCHILD AND PAUL ROTHSCHILD**

**Address:** BUC Fitness Club, 3rd Floor The Point, 76 Regent Road, Sea Point, Cape Town 8005

**Website:** [www.buc.cc](http://www.buc.cc)

**Contact details:** [info@bucfitnessclub.com](mailto:info@bucfitnessclub.com), 021 439 9903, or @BUCfitnessclub on Twitter, BUC Fitness Club on Facebook or @bucfitnessclub on Instagram.

### About BUC Fitness Club:

BUC Fitness Club is based in Cape Town. This world-class facility, which offers sweeping views over the Atlantic ocean and Lions Head, with massive volume in this incredible space, has received national and international praise. BUC Fitness Club has the finest state-of-the-art equipment, offers short-term and long-term memberships, as well as personal training, access to sports scientists and biokineticists, and has designer change rooms, showers and steam rooms.

### INTERVIEW WITH OWNERS, ANDREW AND PAUL ROTHSCHILD.

#### 1.Tell us a bit about yourself.

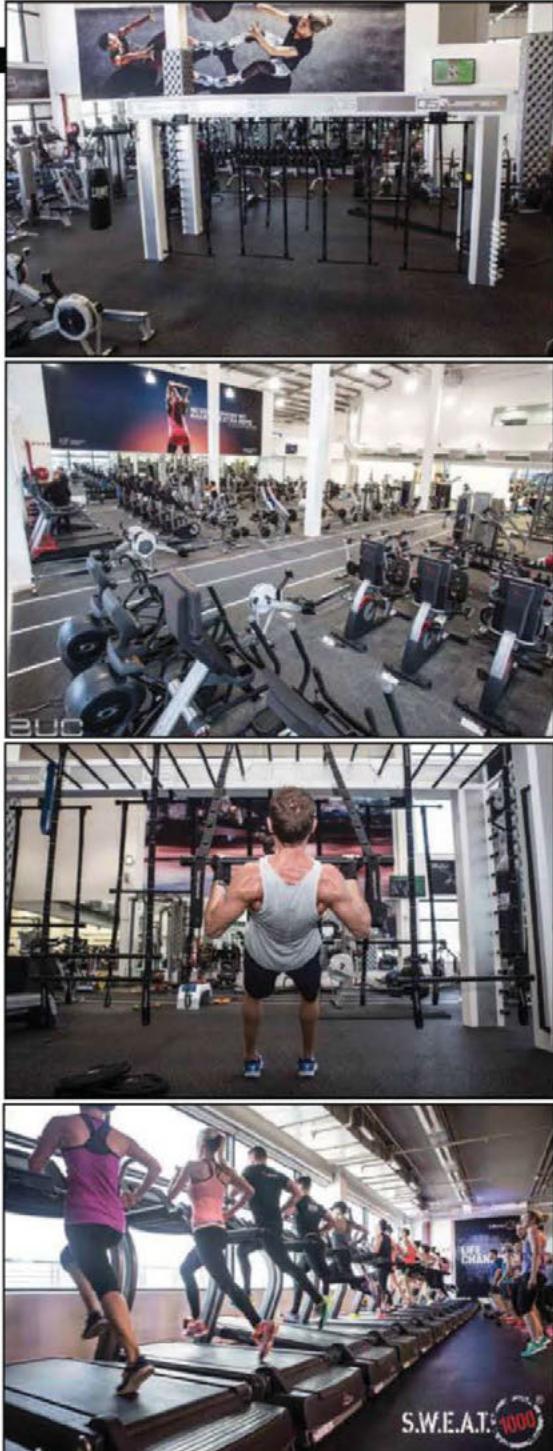
Paul and I have both been involved in all aspects of the fitness industry for over 20 years, from personal training, club management and ownership, to clothing as well as exporting and importing fitness and wellness equipment. Paul and I started BUC Fitness Club in 1995 after completing our honours degrees in Economics and deciding to follow our passion by venturing into the fitness industry. BUC Fitness Club has evolved a great deal over the years, and we have relocated to a bigger, brand new facility, measuring

almost 20,000 square feet, on the Atlantic seaboard in Cape Town. The new facility has massive volumes, incredible views, and is fully air-conditioned. We also founded S.W.E.A.T. 1000 in 2010, and the new BUC Fitness Club is home to the biggest S.W.E.A.T. 1000 studio in the country. BUC Fitness Club has become the place to train for people of all fitness levels, including athletes, professional sportsman, models and actors. BUC Fitness Club has been named as the leading independent gym in South Africa, and the fitness industry remains one that we are both extremely passionate about, and feel blessed to be involved in.

#### 2.How would you describe your gym?

It's a state-of-the-art facility, and the most beautiful gym in the world, which caters for all fitness levels. Members can enjoy working out in our ultra luxurious facilities with cutting-edge wi-fi-enabled Freemotion cardio equipment, which have built in TVs and tablets and are linked to iFit through Google Maps, allowing you to exercise anywhere in the world. BUC Fitness Club is also fully equipped with the Freemotion range of strength and cable equipment, including Freemotion Incline Trainers that incline to 30 degrees, and Freemotion Spinning, as well as Freemotion Tour De France bikes, which allow you to cycle any of the 21 stages of the Tour De France while inclining to 20 degrees and declining to 10 degrees.

We also have Keiser High Performance equipment, for high performance training, which allows clients to see an accurate measure of power output, and Cybex Arc Trainers. We also carry vibration training



machines, Hampton Fitness urethane weights, Jelly Bells, and CrossFit equipment, ranging from Power Racks and sleds, to plyometric platforms. The facility also has a Gyrotonic studio, and offers boxing, and suspension training. The latest modular Italian-engineered Queenax functional rig and a 25m two lane sprint track.

BUC Fitness Club is also home to the B Balanced Pilates studio, which features the latest reformers, towers, chairs and Pilates accessories from the world's leading Pilates company, Balanced Body Pilates.

As mentioned, you'll also find the largest S.W.E.A.T. 1000 studio in the country at the gym.



**Our trainers are all fully certified and have many years of experience, both nationally and internationally.**



#### **3.What is your training philosophy?**

Your health is the most important investment that you can make. It's important to find a workout regime that you enjoy to make it sustainable. Training is a lifestyle and it's important to find time to exercise regularly and challenge yourself. Setting new challenges for yourself will enable you to reach new goals.

#### **4.What services do you provide, and what types of clients do you cater to?**

We provide short-term and long term memberships, as well as personal training, physiotherapy, rehab, high performance training, spinning, yoga, sports massage, Discovery Vitality assessments, Pilates, boutique group training, S.W.E.A.T. 1000 classes, nutritional advice, and gourmet protein shakes, fresh juices and a coffee bar that offers a variety of healthy food choices and protein snacks. We are also linked to Discovery Vitality, so members receive Vitality points every time they work out, as well as 25% cash back on their membership fees.

#### **5.What facilities do you have?**

Designer change rooms with wheelchair access, lockers with Digilock locks, so no locks

or keys are necessary, showers with Hans Grohe massage heads, also with wheelchair access, steam rooms, physiotherapy rooms, a boardroom, a photographic studio and assessment rooms.

#### **6.Tell us a bit about your trainers.**

Our trainers are all fully certified and have many years of experience, both nationally and internationally. We are very strict with the calibre of trainer at BUC Fitness Club, and insist on them doing continued education to ensure that all trainers stay on the cutting edge of industry trends, and that the needs of our clients are fully catered for. Our trainers include sports scientists, physiotherapists, biokineticists, as well as qualified and experienced professional personal trainers.

#### **7.How does your training and facility differ from other, more commercial gyms?**

We offer a convenient, hygienic, fully equipped facility that offers a personalised service to all our valued clients. We make sure that they all feel as though they're part of a family who share common goals and interests. All clients are known on a first name basis and we interact with our clients on a daily basis to ensure that all their fitness needs are catered for, and that they're receiving unparalleled service. We offer an array of exercise disciplines, from high performance training for professional athletes, strength training, and high intensity interval training, to pre- and post-operative rehabilitation. Our valued clients are surrounded with experts in their

**You will find the largest S.W.E.A.T. 1000 studio in the country at the gym.**

fields, who are able to assist and inform them on how to achieve and maintain their goals.

We also work with some of the leading hotels and guest houses in Cape Town, and we have a number of international clients, including movie stars, professional sportsmen. The facility is also often used for TV, magazine and fitness photo shoots.

#### **8.What benefits would someone gain by training at your facility as opposed to a big commercial club?**

They'll get to enjoy the personal service, as well as the ability to interact with a number of fitness professionals, sporting heroes, movie stars, and a host of other celebrities, as well as the opportunity to train and learn from people from all over the world. We also work with a number of the world's best trainers, and doctors in sports medicine from the USA, UK and Australia, to ensure we remain at the top of our game. Our equipment is from the best manufacturers in the world, which ensures minimal equipment, and we also have a full-time maintenance team on hand. We are always first to market with new equipment. We also offer a limited membership, which ensures exclusivity and an exercise environment that is not overcrowded.

#### **9.What is the atmosphere like at your facility?**

Friendly, motivational, energetic, vibrant, addictive and inspiring. ■

## IS IT TIME TO MAKE COCONUT WATER YOUR ENERGY DRINK OF CHOICE?

**WITH ALL THE HYPE AROUND LOW CARB, HIGH FAT (LCHF) DIETS, AND THE POPULARITY OF PALEO-TYPE EATING, PARTICULARLY IN THE CROSSFIT COMMUNITY, THE SUBJECT OF MEDIUM CHAIN TRIGLYCERIDES (MCT) AS A SUITABLE ENERGY SOURCE IS GROWING IN PROMINENCE.**

**HOWEVER, THE IDEA IS BY NO MEANS NEW. IN THE MID TO LATE '90S MCT OILS BECOME POPULAR AMONG THE BURGEONING ENDURANCE COMMUNITY, WHILE MCT OIL WAS PROMOTED IN BODYBUILDING AND FITNESS CIRCLES AS A SUPERIOR FORM OF FAT FOR BODY COMPOSITION AND CONDITIONING.**

# MCTs FOR ENERGY

» By Pedro van Gaalen, Editor

**W**hile this trend lost some momentum over the years, largely due to a lack of credible scientific evidence to support the touted benefits, it never petered out completely.

Today you only have to look to the various coconut-based drinks and bars on sale at health shops, supplement stores and pharmacies to realise that MCTs are back in vogue.

Mark Wolff, an elite age-group triathlete and runner, part-time coach, and founder of local supplement manufacturer, 32Gi, has first-hand experience on the subject, both from a professional and personal perspective. He follows a LCHF diet, with strategic carb re-feeds, when required, to fuel his training or racing.

Wolff explains that MCTs are an ideal source of fuel for endurance athletes

for two main reasons.

"MCTs have a slightly different structure to other fats, which means, in terms of the way in which they're metabolised, they're quite similar to a carbohydrate. MCTs will bypass the normal digestive process that long chain fats go through, and are immediately processed by the liver. This converts them into ketones, which can readily be used for energy production."

These properties can deliver a number of benefits to athletes, not least of which is a denser source of energy, as fats contain more calories per gram than carbohydrates. Wolff does point out that a typical MCT contains roughly 10% fewer calories than a normal long chain triglyceride, offering approximately eight calories per gram, compared with nine from typical fat. "However, that's still double the amount of calories derived from a gram of protein or carbohydrate," he says.

The other benefit is that they can help maximise glycogen utilisation. "In terms of glycogen, once liver and muscle stores

are full they cannot be topped up any further," explains Wolff.

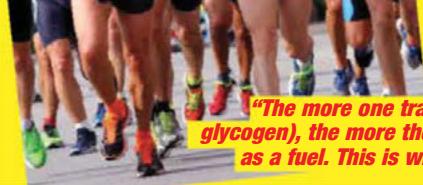
**"However, if you introduce a readily available source of fat into the circulatory system, which muscles can easily utilise for fuel, you'll spare glycogen as your body burns this highly bioavailable fuel source. This will enable your 'engine' to run for longer, which can make a significant difference in any endurance event."**

However, endurance can be a relative term, as some athletes are able to sustain higher intensities than others. For instance, a sub-three hour marathoner and a five hour marathoner will have vastly different metabolisms and energy requirements.

Accordingly, does the metabolic pathway used to digest MCTs support their use as a fuel for high intensity, sustained endurance activity? To answer this Wolff first explains how the actual energy conversion process works.

"As I already mentioned, MCTs don't follow the normal digestive pathway of a typical long chain

**"The effectiveness of MCTs as a source of fuel will depend on the individual athlete, as those who have trained to become fat adapted, and are therefore better metabolisers of fat, in any form and at higher intensities, will derive the greatest benefit."**



**"The more one trains on fat (in the absence of sufficient glycogen), the more the body adapts to the metabolism of fat as a fuel. This is what makes athletes more fat efficient."**

triglyceride or typical fat. MCTs are processed directly in the liver, and immediately become available for use in the production of energy. Carnitine usually acts as the transporter of free fatty acids into the mitochondria of muscle cells, where they're converted into energy. However, MCTs don't require this form of transport as they cross the mitochondrial membrane quite easily, and are processed very quickly."

However, when it comes to intensity, Mark says we also need to consider the role of oxygen in the metabolism of MCTs. "In short, fats still require oxygen to be converted into ATP, and at higher intensities oxygen levels are low. It is at this point that the body normally turns to glycogen – our naturally occurring carbohydrate store – as this is a more efficient energy pathway when oxygen is less abundant."

However, an athlete's ability to sustain this level of intensity is limited as glycogen stores become depleted, and there is a limit to how much glycogen can be replaced while on the move. "The question we should be asking in this context then becomes, do MCTs help spare glycogen? My answer to that is that it's highly possible, but only if you can harness it properly."

And this is the crux of the matter, according to Wolff. "The effectiveness of MCTs as a source of fuel will depend on the individual athlete, as those who have trained to become fat adapted, and are therefore better metabolisers of fat, in any form and at higher intensities, will derive the greatest benefit."

This is something that can be developed through proper training, he says. "The more one trains on fat (in the absence of sufficient glycogen), the more the body adapts to the metabolism of fat as a fuel. This is what makes athletes more fat efficient."

As this type of training progresses an athlete should also improve his ability to metabolise fat at higher intensities, which means he will use more fats during a race or intense training session before reaching the point where glycogen is required. "An athlete who is always dependant on carbohydrates, be it for training or racing, will never reach this level of efficiency though."

To better illustrate this point, Wolff offers a simple comparison with a

coffee drinker. "If an athlete drinks five cups of coffee a day, and then decides he needs caffeine during an event, the caffeine won't really do much to him as he has developed a tolerance to it. However, a person who doesn't have a high caffeine tolerance will get a bigger boost when consuming it. In the same vein, an athlete who expects a huge impact from MCTs, when all he does is consume excessive amounts of carbohydrates, won't really derive the greatest benefit of this type of fat. An athlete who is fat adapted, on the other hand, will definitely feel a difference when consuming MCTs, especially the longer the endurance event is."

In this regard, Wolff says that it takes time to adapt, and it isn't merely a case of only consuming MCTs during training sessions. "Proper nutrition, at all times, which could consist of a general LCHF diet,

or carb backloading strategies, for instance, and the correct type of training to promote fat adaptation, is where the focus should be to take full advantage of MCTs as a fuel source during activity. There are no quick fixes."



**"An MCT oil offers various health benefits, and should therefore be incorporated into a healthy diet. In terms of sporting performance, it is an additional source of energy that can form part of a comprehensive approach to race fuelling."**

## WHICH MCTs SHOULD YOU CONSIDER?

**S**o, should endurance athletes be throwing their carb-based gels away, and replacing them with some form of MCT oil? Don't be too hasty, says Wolff.

"MCTs definitely won't replace carbohydrates when it comes to fuelling optimal performance. I believe there is room for both, but that equation boils down to the individual, his dietary habits, training and physiological requirements during an event."

However, he does caution against spiking blood sugar before an endurance event. "It's my opinion that's not the way to go. Stable blood sugar levels are required initially, which is something that MCTs can provide. MCTs will 'brim' your fuel tank nicely, delivering a steady supply of energy in the initial stages of a race, leaving the more efficient energy source – glycogen – for when you need a burst, or the final pick up to the finish line."

**In that case, what form of MCTs should you consider then? Well, Wolff suggests sticking to one of two options. "I would only recommend coconut oil or palm kernel oil. You can also purchase extracted MCTs, and there are already a few brands out there that offer high quality products."**

And he believes that this list will only continue to grow, in accordance with the growing popularity of LCHF eating, and greater awareness around the health implications of excessive sugar consumption. "This is already a trend in Europe, with sufficient evidence to suggest that there will be more conventional energy supplement products that contain MCTs on local shelves very soon. At the very least, expect to see MCTs added to sports gels, protein shakes and weight loss products."

There is also a growing body of research to support the use of MCTs as an energy supplement, which was the missing factor in the 1990s when the initial rise in MCT use started to lose steam. "There has definitely

been more scientific testing since the '90s, which is helping to fuel this shift. For instance, in 2003, medical testing showed energy expenditure increased due to the high fat oxidation rates associated with MCTs, which was associated with both increased energy and weight loss. Accordingly, many athletes use MCTs to reduce fat and increase lean muscle mass, which has a direct correlation in performance due to improved power to weight ratios."

Respected sports nutrition scientist, Asker Jeukendrup, has also produced data that support the use of fat as a source of fuel for endurance athletes. "While his studies show that ingestion of MCTs did not play any significant role in high intensity performance, he did find that in an endurance-trained individual, if diet was altered and followed for 7-10 days before an endurance event, substrate utilisation during submaximal exercise could be altered substantially by a high fat (60-70% of energy) intake." There is also an increase in research funding going into LCHF eating and its effect on health and performance, which should deliver new data that further supports this approach in the near future.

In closing, Wolff asserts that MCTs are not a 'miracle product' or something that will enhance performance in any significant manner. "An MCT oil certainly offers various health benefits, and should therefore be incorporated into a healthy diet. In terms of sporting performance, it is merely an additional source of energy that can form part of a comprehensive approach to race fuelling, but it's only effective if an athlete does the necessary work to derive the full benefit. Anyone who is expecting an immediate energy boost from MCT consumption, and a commensurate increase in performance on a bike, swim or run, should think again." ■

# PACK IT WITH PROTEIN!

THE BATTLEFIELD MIGHT BE IN THE GYM – BUT IT'S IN  
THE KITCHEN WHERE THE WAR WILL BE WON!

## Teriyaki Tuna

### INGREDIENTS:

1 cup teriyaki sauce  
 ½ cup olive oil  
 1 tbsp minced garlic  
 Ground black pepper to taste  
 4 tuna fillets

### METHOD:

1. Mix the teriyaki sauce, olive oil, garlic and pepper together in a plastic container. Place the tuna steaks inside, ensuring they are well coated. Marinade for 40 minutes in the fridge.
2. Pre-heat the grill to a high heat, and oil the grate.
3. Remove tuna from the marinade and place on the grate to cook.
4. Like it rare? Grill for 3-5 minutes a side. Medium, 5-8 minutes, and well done, 8-10 minutes per side. Cooking times will vary depending on the thickness of your cuts.

Tuna: 30g of protein per 100g serving,  
 6g of fat and zero carbs. 184 calories.

*Make sure you get enough of the one macronutrient necessary for muscle growth: protein!*





*Didn't think this one would pack such a punch? 100g of non-fat mozzarella only contains 149 calories, and 4g of carbs. It is also packed with calcium (be careful though, the sodium content is a little high).*

## Mozzarella sticks

### INGREDIENTS:

20 non-fat mozzarella sticks (cut like fries)

1 large egg

3 tbsp flour

1 tbsp dried parsley

1 tbsp flaked garlic

2 tbsp breadcrumbs

Pinch of salt

### METHOD:

1. Place the cut pieces of cheese into the freezer, until fully frozen.
2. Whisk the egg in a separate bowl and place the flour in a small dish. Mix the salt, breadcrumbs, garlic and parsley together.
3. Dip the frozen mozzarella sticks into the flour and shake off excess flour. Next, dip them into the egg, then coat them with the crumb mixture. Repeat with the remaining sticks, placing them on a non-stick baking tray as you go. Once done, return them to the freezer.
4. Freezing them completely is essential to ensure that the cheese does not fully melt when cooking, ensuring the coating browns nicely.
5. Pre-heat the oven to 180°C. Once ready for cooking, lightly brush olive oil on top and grill for 3-4 minutes. Remove, turn over, and grill for another 3-4 minutes.

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A deficiency in protein leads to muscle atrophy, pretty much the opposite of what you're trying to achieve. So ensure that you pick the best cuts that pack the biggest punch.

*Bacon shouldn't get all the love. This lean and juicy cut of pork should be on everybody's grocery list.*

## NOT ALL PROTEIN SOURCES ARE CREATED EQUAL!

Here are the top 5 foods with the highest protein content:



#1: Turkey and chicken 30g per 100g



#2: Fish like tuna and salmon 25-30g per 100g



#3: Non-fat mozzarella 32g per 100g



#4: Lean beef 36g per 100g



#5: Pork Loin 25g per 100g

\*SOURCED FROM WWW.NUTRITIONDATA.COM

## Pork and pineapple kebabs

### INGREDIENTS:

2 tbsp chopped fresh cilantro  
3 pork tenderloins, cut into 25mm thick pieces  
1 pineapple, cut into chunks  
Salt and black pepper  
 $\frac{1}{4}$  cup honey  
Wooden skewers

### METHOD:

1. Pre-soak the wooden skewers for 15 minutes.
2. Thread the pork and pineapple onto the skewers, and season with salt and pepper.
3. Heat the oven grill to hot. Place the skewers on a non-stick baking pan or foil sheet, occasionally turning and brushing with honey.
4. Grill until browned. Grilling time varies, but is usually 8-12 minutes.

# WHAT'S HOT

## BIOGEN TONALIN® CLA

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## PHE德拉-CUT LIPO XT

An improved metabolic efficiency is all about your lifestyle approach. What better way to achieve this lifestyle than through some added help from USN Phedra-Cut LIPO XT! This market-leading formulation includes Raspberry Ketone and Green Coffee Bean Extract, as well as other thermogenic agents to improve the effect. Find out more on [www.usn.co.za](http://www.usn.co.za).



## SOLAL FEELFULL OIL

Solal's FeelFull Oil is a new fat-based product that will make you fitter and faster, not fatter!

Medium Chain Triglycerides (MCTs) are a type of fat that causes the body to produce fat-burning and energy-releasing ketones. Ketones also suppress appetite and boost metabolic rate. The results are weight loss and instant energy for physical performance and endurance.



## SUPASHAPE FLAVOUR INFUSIONS

Water has numerous health benefits, including boosting your metabolic rate, and keeping your organs and muscles working efficiently. However, not too many people enjoy the bland taste of plain water. Supashape's Flavour Infusions will help you reach your daily water quota. Available in three fruity flavours, you can 'punch' up your water to meet your taste preferences with these zero calorie flavour enhancers.

## NIKE TRAINING CLUB

Nike's training club promotes group training, focusing on high-intensity workouts, extreme strength training, competition and teamwork. This brand has built a 'cultish' fan base, and has taken the fitness world by storm. In synergy with the craze of CrossFit training, Nike has a wide range of training gear for these active workout sessions, and the demands of group training.



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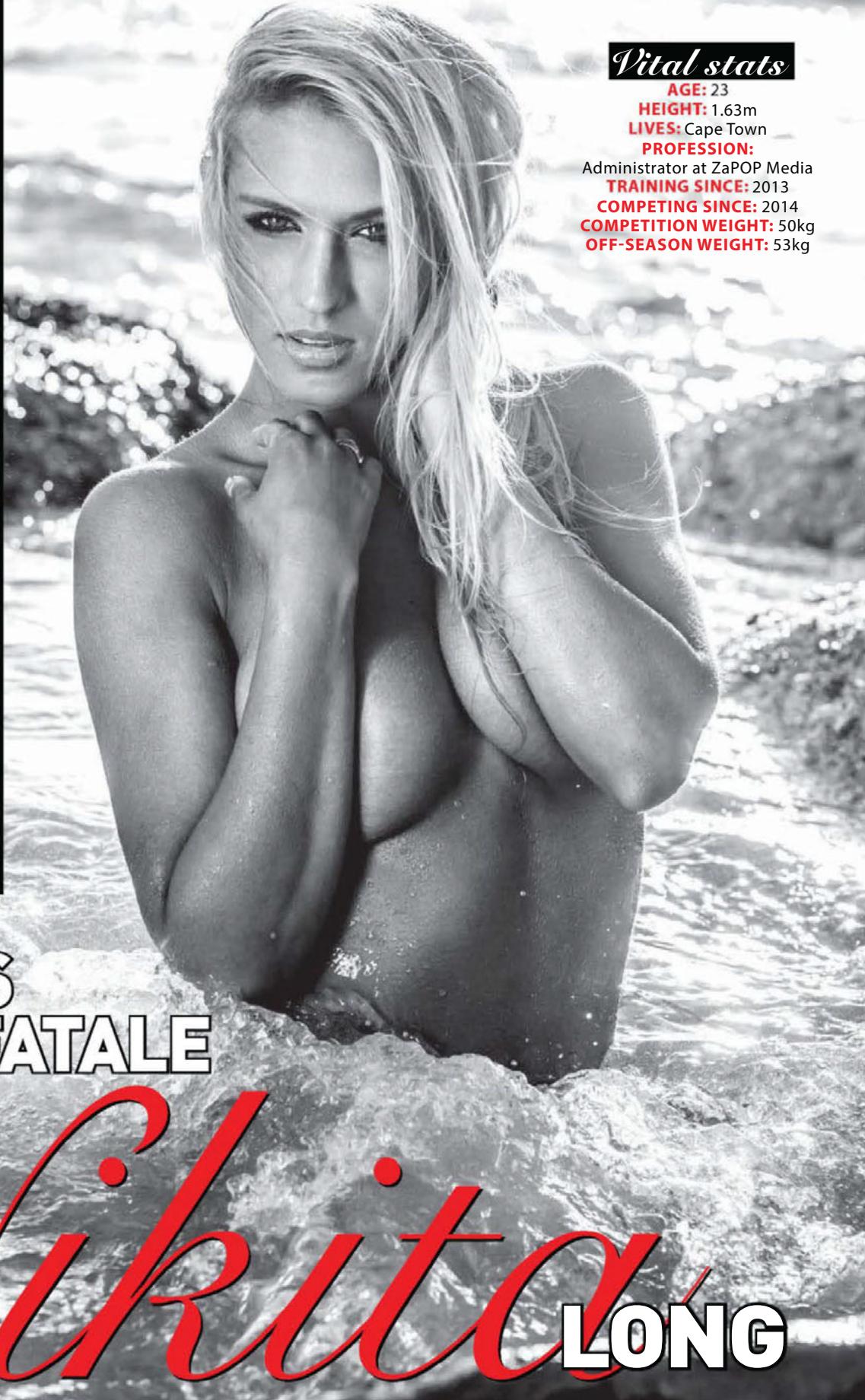


[MALE FIXATION]

**N**I KITA LONG IS ANOTHER ONE OF SOUTH AFRICA'S UP-AND-COMING BIKINI ATHLETES, WHO EXUDES A SASS AND SWAGGER THAT SETS HER APART FROM THE CROWD. SHE ALSO HAS A WORK ETHIC IN THE GYM THAT IS SECOND TO NONE, WHICH IS A KILLER COMBINATION IN THE HIGHLY COMPETITIVE FITNESS INDUSTRY. SHE PLANS TO LIGHT UP THE WBFF SA STAGE IN 2015, AND BASED ON HER ANSWERS TO OUR QUESTIONS, WE HAVE NO DOUBT THAT SHE'LL BRING SOMETHING EXTRA SPECIAL TO THE STAGE.

## Vital stats

AGE: 23  
HEIGHT: 1.63m  
LIVES: Cape Town  
PROFESSION:  
Administrator at ZaPOP Media  
TRAINING SINCE: 2013  
COMPETING SINCE: 2014  
COMPETITION WEIGHT: 50kg  
OFF-SEASON WEIGHT: 53kg



**FITNESS  
FEMME FATALE**

*Nikita* **LONG**

» Interview by Andrew Carruthers, Publisher » Photography by Wayne Burgin - WBP Photography (083 231 8724)

### **Who are you and where did you come from?**

I was born in Pietermaritzburg, but I lived most of my life in Durban. I suppose you could therefore call me a Durban girl. I appear soft, but don't let my looks fool you. I'm a real toughie. I don't like authority; I prefer to lead rather than follow. I'm confident, straight forward, witty, flirtatious and full of attitude. I'm the friend who is always cracking jokes, and I like being the centre of attention. I'm easy to get along with, and have a genuine heart, but I don't love easily. There are no grey areas with me either. I don't believe in hiding who you are, even if you're in the queen's company. Either you like me or you don't, and I don't want to be everyone's cup of tea; that's boring! Oh, and I'm high maintenance, but don't worry, I take care of that.

### **What does a typical day in your life look like?**

I'm up at 04:30am if I'm training twice that day, otherwise I get up at 05:30am, which is when I prep my meals for the day. I'm off to my day job between 08:00 and 17:00, and go straight to the gym after work. I get home pretty late and then the whole cycle begins again. It's a long day, every day, so I have very little time to myself.

### **When you do find some spare time, what do you do for fun?**

I love shopping, and spending time with my crazy girlfriends, sipping on cocktails. I also play a bit of foosball since I recently discovered that I'm pretty good at it. I also enjoy watching football; I'm a proud Chelsea supporter. Hiking with my male friends is also great fun as they like to test my fitness levels.

### **How did you find your way onto the competitive stage?**

I had always admired the bodies of the women I saw on stage, ever since the first show I attended back in 2010.

### **Has this interest in health fitness been a recent development, or have you always been active?**

I have no form of active background. My hand-eye coordination was so far off the mark that my PT teachers would ask me to sit inside during class. Nowadays I can catch a ball or two though.

### **What are your goals for the fitness stage this year, or in the near future?**

This year my plan is to conquer the WBFF SA in June. I believe that the WBFF is a prestigious show, and I'd be honoured to step out on that stage among those athletes. If I don't succeed there, I will try out Nabba Western Province again, and will hopefully walk off in first place. Ultimately I'd like to be recognised as a top fitness model, both locally and internationally.

### **Tell us about your least favourite body part to train.**

Definitely legs. It's the longest session, and I push

my hardest on every rep, so I always feel the aftermath. It is my most challenging day in the gym.

### **What do you think is your finest physical asset and why?**

Ironically that would be my legs. They were my weakness in my first comp, but with a lot of dedication and hard work I have turned them into my strongest point, and finest asset as far as I am concerned.

### **What kind of nutritional principles do you follow?**

My off-season nutritional principles have been implemented as part of a lifestyle change. That means I always avoid things such as sugar,

table salt, full cream dairy products, carbonated drinks, milk chocolate and processed foods, and no carbs after 19:00, unless I'm required to eat carbs after training. I basically eat well and fairly clean, with my protein portion as the largest element on my plate. Of course, I do get a cheat meal, which is when I like to indulge a little, but even in those instances the healthy option is always better.

### **What are your favourite cheat meals?**

I make a "to eat" list during my show prep, so, as I crave something I write it down so that I can have it after the show. This could include anything, but is generally a big beefy burger, a hot curry, a slice of honey and oats bread with cheese, Pringles, pizza, sushi, even a

*"The best part of competing is when you step onto the stage and have that feeling of satisfaction, knowing that you deserve to be there."*

### **Tell us a bit about your training style.**

My training style varies depending on my goals. If I'm trying to gain muscle I do very little cardio, but I rep till failure, and lift heavier weights at a slower pace. If I'm trying to burn body fat and cut for some definition I increase my cardio and do high intensity workouts. I generally do 30 second sprint intervals, with 30 seconds of rest, on whatever cardio machine I'm using, to burn body fat. I will also lift lighter weights with more reps at a faster pace.

### **What does your weekly training split look like?**

I train six days a week, from Sunday to Friday. Saturday is my rest day.

- **Sun: Morning** – Cardio and abs. **Afternoon** – Legs (hammies and quads)
- **Mon: Evening** – Chest, shoulders, triceps and calves
- **Tue: Morning** – Cardio. **Evenings** – Back, biceps and abs
- **Wed: Evening** – Legs (hammies and quads) and calves
- **Thu: Evening** – Chest, shoulders and triceps
- **Fri: Morning** – Cardio and abs. **Evening** – Back, biceps and calves



## [MALE FIXATION]

seafood platter. A Sunday roast, followed by something sweet, like Lindt strawberry chocolate balls, is my favourite though.

### **What supplements do you use and why?**

I only use supplements during my bulking phase, namely SSN IsoPro or 100% whey. I tend not to use many products during my show prep phase as I get all the nutrients I need from my food. However, I use glutamine and BPI Blox (amino acid building blocks) as a pre-workout drink, and glutamine as a post-workout option.

### **Who is your favourite fitness personality or celebrity?**

That's easy, Andreia Brazier.

### **Who looks after your show prep?**

I train under Jaqui Havenga at Roaring Physiques. She does all my assessments and meal plans. The training I do on my own.

### **What do you think is the best part of competing?**

Stepping onto that stage and having that feeling of satisfaction, knowing that you deserve to be there. The reward of commitment and dedication. It proves a lot about one's character, having the mental strength to sacrifice the pleasures in life and achieve that stage condition. Becoming an inspiration to aspiring fitness models is also a nice part of it.

## *Ok, let's have some fun.*

### **Tell us something that not many people know about you.**

I currently have 10 tattoos. They're small but that still counts, right?

### **Tell us one of your good habits, and one of your bad ones.**

**Good habit:** Self-discipline.

**Bad habit:** Short tempered.

### **What's the funniest thing you've ever seen in the gym?**

I've seen many things in the gym that I go home and have a laugh about, but the one that many of us saw was a chick who fell down the stairs, then nervously got back up and said "leg day". We all had a good laugh.

### **If you had a time machine, where would you go?**

I wouldn't want to go back in time. I'd want to go forward to the year 3000 as I'm interested to see how technology has progressed.

### **Your favourite place on earth is?**

Bora Bora

### **What constitutes the ideal male physique in your opinion?**

James Franco's. Haha, no seriously, in my opinion a man must be well built, and have some shape, with a six pack!

### **Favourite sports car?**

A black Aston Martin Vanquish Volante, Carbon Edition.

### **Party or quiet retreat?**

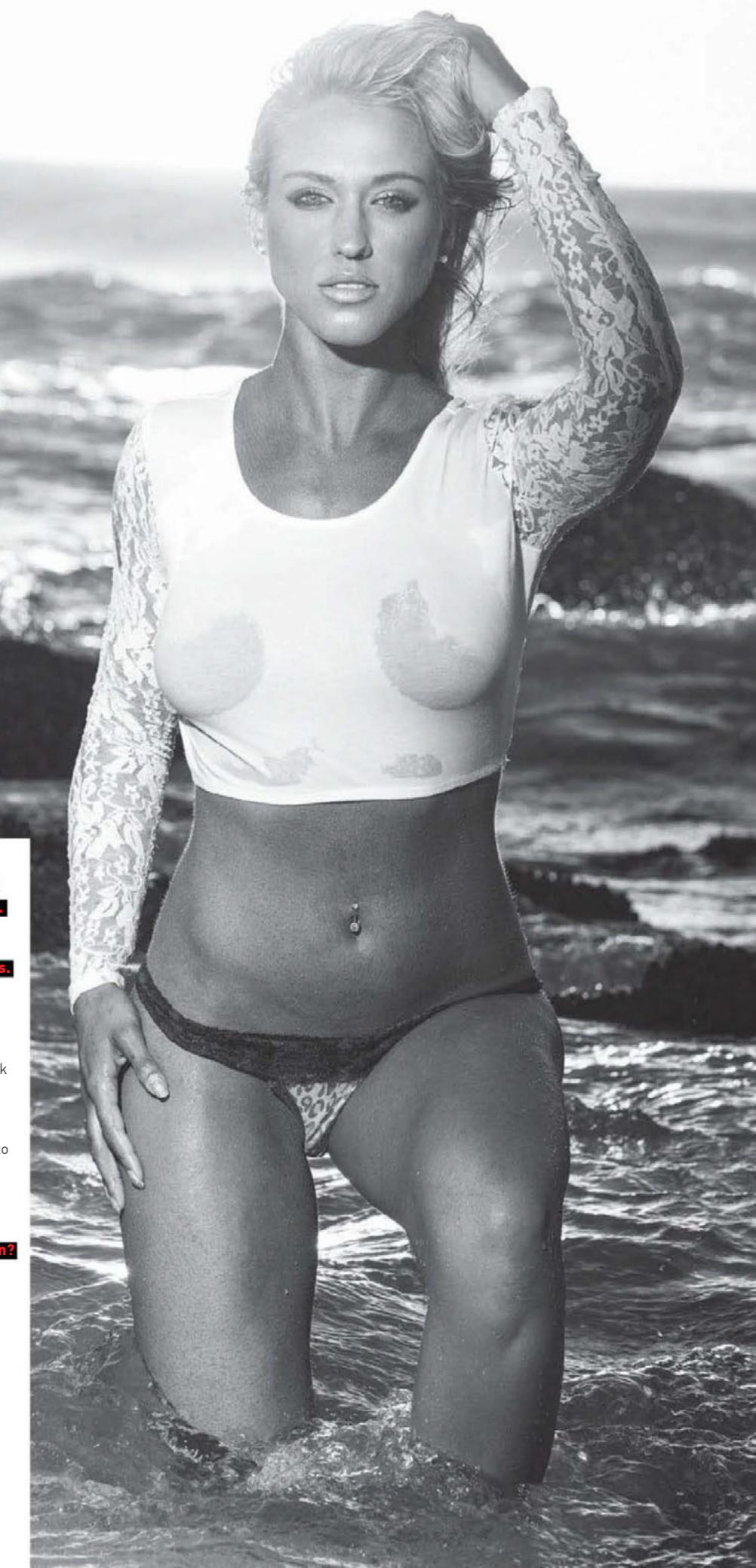
That's not an option. Both!

### **Squats, leg presses or lunges?**

I fancy pressing, but squats for the win.

### **Dumbest pick up line you've ever heard?**

You are so beautiful that I forgot my pick up line. ■



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"A gram of feces can contain 10 million viruses, one million bacteria, 1,000 parasite cysts and 100 worm eggs."

- Rose George, author of *The Big Necessity: The Unmentionable World of Human Waste and Why It Matters* (Metropolitan, 2008).

# TOILET TALK

THE  
HEALTH  
SCOOP  
ON  
POOP

A  
HEALTHY  
STOOL  
SHOULD BE:  
Brown,  
soft, but  
formed,  
consistent  
in shape  
and colour,  
easy to  
pass.

## *What your digestive system says about your health*

By Pedro van Gaalen, Editor

While talk of bowel movements and the goings-on of your digestive system are taboo in just about every social setting, with the odd fart joke the only possible exception, it is a topic worth discussing in the context of your health.

The primary role of our digestive system is to extract vital nutrients from the food we eat, and then excrete the waste by-products. However, your digestive system is also intricately linked with immunity, vitality and general well-being. Accordingly, there is a great deal of insight we can

glean from our visits to the bathroom.

Factors such as regularity or frequency, composition, colour and consistency all hold morsels of information, both literally and figuratively, that are indicative of your current health, and may serve as early warning signs of other, often serious conditions.

While the thought of sneaking a peak at what's left of your dinner, before you flush it away, may seem repulsive, there are a few tell-tale factors to consider before a closer

examination is required. In terms of frequency, most experts, including gastroenterologists, seem to agree that there isn't a 'magic number' that indicates a healthy digestive system when it comes to bowel movements.

The general consensus is that everyone is different, and will process their meals at different rates, according to a number of different factors. Meal composition, hydration, the amount of fibre in your diet, how much you exercise, and the status of your gut – how much 'healthy' bacteria and digestive enzymes are available to assist in the process – all affect transit time and frequency.

In general, healthy transit time is anywhere from 12-24 hours, which means that one to two bowel movements a day is often considered healthy. However, everyone's regularity is highly individualised, which could mean one bowel movement every two or three days could also be considered 'normal' in context. In fact, a study conducted at the Mayo Clinic found that average transit time was 53 hours. In this case, any deviation from your

norm or average should be considered as an indicator of potential problems or health concerns. Other warning signs to watch for when this happens include fever, abdominal pain, or dehydration, as any one of these symptoms could be symptomatic of a virus, appendicitis, or food poisoning.

When bowel transit time increases, fecal matter becomes harder, and is therefore more difficult to pass, which is when constipation occurs. In addition, intestinal flora will continue to feed on it, which can cause gas, bloating and ultimately damage to the intestinal lining. Toxins may also start to seep into the bloodstream through the permeable bowel lining, commonly referred to as leaky gut syndrome. This has been linked to a number of lifestyle-related ailments, including diabetes and MS.

When transit time is too quick there is a risk of malabsorption, as the digestive system doesn't have sufficient time to perform its function. This is when we experience diarrhoea.

#### CHECK YOUR TRANSIT TIME:

To check bowel transit time drink 240ml of beet juice or eat two tablespoons of sesame seeds. Note the time, and check your stools over the next 12-48 hours.



A healthy transit time is anywhere from 12-24 hours.



The time it takes to see a reddish coloured stool, if you drank the beet juice, or see the seeds, indicates your bowel transit time.

**THE 4S METHOD:** In addition to monitoring frequency, a quick evaluation before you flush, according to the four S's of defecation - shape, size, smell and shade - will also provide important information about your health.

**SMELL:** Your stool consists of undigested food, bacteria, mucus, dead cells and parasites. In essence this is all decaying matter, so a bad smell is not indicative

of a problem. The bacteria and parasites present can also contain compounds that produce an especially unpleasant smell. While the smell isn't pleasant, anything overpowering or rancid could indicate issues.



**SIZE AND SHAPE:** A great deal of importance has been placed on the size and shape of stools in the past. However, recent research has debunked this way of thinking. While a pencil-shape may indicate a blockage, it is not always cause for concern. The important element, once again, is any persistent deviation from the norm.

**Over 70% of the human body's immune cells are found in the gut's mucosal lining.**

## BRISTOL STOOL FORM SCALE



However, if you would like to be more 'clinical' in your poo appraisal, you can also use the Bristol Stool Form Scale, a visual guide for stools developed by researchers at the Bristol Royal Infirmary in England.

- **TYPE 1:** Separate hard lumps, like nuts.
- **TYPE 2:** Sausage-like, but lumpy.
- **TYPE 3:** Like a sausage, but with cracks in the surface.
- **TYPE 4:** Like a sausage or snake, smooth and soft.
- **TYPE 5:** Soft blobs with clear-cut edges.
- **TYPE 6:** Fluffy pieces with ragged edges, a mushy stool.
- **TYPE 7:** Watery, no solid pieces.

Types 1 and 2 indicate constipation, with 3 and 4 considered the ideal stools (type 4 is the ideal form), while 5, 6 and 7 are indicative of diarrhoea. ■

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